# Institutional ethnographies on digital technologies:

# Investigating and developing critical digital literacy practices with high school students

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**Abstract**

Recent scholarship on digital technologies underlines a troubling disconnect: teachers and students are increasingly reliant on these tools without considering the ways they influence their lives, their learning, and issues of social and environmental justice. This dissertation explores a research project in which two Canadian Grade 8 Social Studies classes (students aged 13-14) investigated how their everyday experiences online or with digital tools relate to their well-being and the well-being of the planet. The research project provided a context for analyzing how young people are oriented by and through the social relations bound up in digital technologies and texts, while also looking at and enacting ways by which young people can more actively and critically involve themselves in these relations. By facilitating students through an institutional ethnographic inquiry about and with digital tools, this research aimed to reveal how digital tools shape students' experiences in similar ways, how students understand the critical dimensions of their technological practices, and how pedagogical practices and the structures that mediate students' learning relate to the development of critical digital literacy practices. In answering these questions, this dissertation highlights some resonances between a participant-centred approach to research and student-centred approaches to education. Unlike existing critical literacy research that focuses mostly on the texts that students engage with, my research broadens the scope of critical digital literacy education to investigate the impacts digital technologies themselves have on students, and the relations between students and the people involved extra-locally in the coordination of students' experiences with these tools. As the ways that students and educators relate through technologies are traced and discussed, we can work to disrupt – if necessary – or promote – if valuable – the various digital relations we uncover. Supporting the critical use of technology in schools is important for the experiences and

educational outcomes of students, as well as for improving the conditions of other implicated parties – both human and ecological.

Des études récentes sur les technologies numériques soulignent une déconnexion troublante : les enseignants et les étudiants dépendent de plus en plus de ces outils sans tenir compte de la manière dont ils influencent leur vie, leur apprentissage et les questions de justice sociale et environnementale. Cette thèse explore un projet de recherche dans lequel des élèves canadiens âgés de treize et quatorze ans, répartis dans deux classes et suivant un cours d'études sociales (*social studies*), ont étudié comment leurs expériences quotidiennes en ligne ou avec des outils numériques sont liées à leur bien-être et au bien-être de la planète. Le projet de recherche a fourni un contexte pour analyser comment les jeunes sont orientés par et à travers les relations sociales liées aux technologies numériques et aux textes, tout en examinant et en adoptant des moyens par lesquels les jeunes peuvent s'impliquer plus activement et de manière critique dans ces relations. En guidant les étudiants à travers une enquête de type ethnographique institutionnelle, cette recherche visait à répondre aux trois questions suivantes : comment les outils numériques orientent les expériences des étudiants de manière similaire ? Comment les étudiants comprennent-ils les dimensions critiques de leurs pratiques technologiques ? Comment les pratiques pédagogiques et les structures qui médiatisent l'apprentissage des élèves sont-elles liées au développement de pratiques critiques en littératie numérique ? En répondant à ces questions, cette thèse met en évidence certaines résonances entre une approche de la recherche centrée sur le participant et des approches de l'éducation centrées sur l'étudiant. Contrairement à la recherche existante sur la littératie critique qui se concentre principalement sur les textes avec lesquels les élèves interagissent, cette recherche élargit la portée de l'éducation à la littératie

numérique critique pour étudier les effets que les technologies numériques elles-mêmes ont sur les élèves et les relations entre les élèves et les personnes impliquées extra-localement dans la coordination des expériences des étudiants avec ces outils. Soutenir l'utilisation critique de la technologie dans les écoles est important pour les expériences et les résultats scolaires des élèves, ainsi que pour améliorer les conditions des autres parties impliquées.

**Acknowledgements**

I want to begin by acknowledging that I wrote most of this dissertation in an area that continues to be a home and meeting point for many Indigenous peoples including the Kanien'kehá:ka of the Haudenosaunee Confederacy, the Huron/Wendat, the Abenaki, and the Anishinaabeg. Throughout my PhD project, I aimed to focus on this acknowledgement as a way of orienting the critical dimensions of students' digital literacy practices around material issues of colonialism, environmentalism, and social justice.

I am grateful to so many people and organizations who helped me make it to this stage in my education. Thanks to the Social Sciences and Humanities Research Council of Canada and McGill University for funding a large part of my studies. Thank you to my research participants for making my research real. Thanks to the written and oral examiners for engaging with my ideas. And thank you to my colleagues and the students I have worked with for inspiring and supporting my research focuses. In particular, I would like to thank a few individuals who made this research journey especially meaningful, warm, challenging (in a supportive way), and even fun: my supervisory committee Naomi Nichols, Claudia Mitchell, and Christian Ehret, as well as our department chair, Lisa Starr; my classmates Jayne, Vanessa, Ellen, Nesa, Horaţiu, Luka, Talia, Amelia, Maxime, Chris, and Mitch; my mom and forever proofreader, Mona; my dad and forever tech support, Dan; and finally, my partner James for going through this whole PhD thing with me. I have so much love for all of you. Lastly, I would like to acknowledge the support and inspiration I received from my late mentor, Aziz Choudry, and my late grandmother, Eva Margolus. My research is dedicated to you.

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## List of Abbreviations

| Abbreviation | Definition |
|---|---|
| CDL | critical digital literacy |
| IE | institutional ethnography |
| AI | artificial intelligence |
| DPVM | digital participatory visual methodologies |
| RQ | research question |

# Chapter 1: Introduction

"We start off from our own particular position and interests – what we care about."

-Dorothy Smith and Alison Griffith, 2022, p. 76

I am starting from a lot of places.

Can I be honest with you? I'm writing a doctoral thesis but I'm not really sure why. I mean, I can tell you how I got here, or I can try – I'll start from when I was teaching high school in Western Canada. I was in my early- and mid-twenties and loved the job, but after a few years of 60-hour work weeks, I was ready for a little break – a recharge – so decided to do an MA in Education. My brother lived in Montreal, and I had always enjoyed visiting, so I applied to McGill University and got in. During the program, I learned a lot about teaching and about myself, but the 2 years felt too short, and when I noticed the end barrelling towards me, I wasn't ready to go back to teaching yet. So, I applied to do a PhD.

There are other ways to tell this story. I'll start again. I was born in the late 80's and only remember a bit of life before the internet took over. Growing up, I was an early adopter of many digital technologies. I had my first website when I was 12, a Facebook account before all of my friends, a touch-screen cellphone before smartphones were introduced, and an early version of a computer tablet – a hand-me-down from my dad. After high school though, I resisted getting a smartphone for so long that it eventually became my thing. (I still don't have a smartphone.) I stopped using Facebook in 2010 and although still very active online, I became more critical of the ways I was relating to digital tools. I decided it would be fun to spend a full year offline and started thinking seriously about how I could turn that into a learning experience, rather than a frivolous flaunting of my privilege. I was finishing an MA at the time, and it seemed like I could

justify the year offline if I could meaningfully connect it to something related to grad school. So, I applied to do a PhD.

I'll start one last time. I was about 8 years old and playing in a basketball tournament with some friends. I remember seeing crowds of people gathered outside the courts, holding signs and handing out pieces of paper. I asked my mom what they were doing. She explained that the tournament was sponsored by Nike and that protesters were trying to raise awareness about sweatshops and the exploitative labour that go into making Nike's shoes. After that, I stopped wearing Nike products and started getting involved with any social justice club or committee that would have me. By high school, I was helping organize demonstrations and campaigns – mostly in connection to queer and environmental issues – and in my undergrad I took things further – getting arrested for protesting a development project on campus, travelling to the West Bank as an advocate for Palestinian human rights, and continuing to organize marches and demonstrations with classmates and friends. During my MA, I learned about George Smith and the work he had done as an activist-ethnographer, uncovering how the ruling relations of the state coordinated homophobic police activity (G. W. Smith, 1990), and made it difficult for people living with HIV/AIDS to access potentially life-saving treatments (G. W. Smith, 1995). Smith died of AIDS with much of his work unfinished, but it was taken up, built upon, and championed by other activists and scholars – many of whom came to call themselves institutional ethnographers. One such scholar worked in my department and agreed to supervise me if I chose to continue with grad school after the MA. So, I applied to do a PhD.

**Going Offline**

I spent the entire year of 2020 offline and built the experience into the candidacy process for my doctoral degree. I framed it as a way to help me think about how the internet impacts my

life and my studies, but it was also an excuse to log off and do a lot of the reading that formed the foundation for this thesis. Offline, I had a harder time accessing sources to read. However, I had prepared by collecting articles, and I bought and borrowed books throughout the year. With a limited number of articles and books, I ended up reading things more carefully than I had the year before. Online, I was often tempted to skim abstracts in what felt like a race to collect the most citations. Offline, I found it easier to do close readings and review the literature grounding my research with patience and curiosity.

The year offline was surprising, and not just because a pandemic hit partway through that forced most everybody else entirely online. One of the startling discoveries I made was just how much people (myself included) do not know about the internet. We rely on it, but many of us have a lot of trouble explaining what the internet actually is. The distinctions between what is online and offline are becoming harder and harder to define. At least a dozen times while I was offline, I had someone tell me that they were surprised to receive a text message from me because they thought text messages use the internet. Or discussing “the cloud” with colleagues, I would discover that many thought that their files were actually swirling around in the air between satellites and not just stored on remote computers. By extension, I had many conversations with teacher friends about whether a paper-free classroom was more ecological than one where everything is digitized. How does the paper industry compare to the mining and manufacturing of digital technologies? And what about recycling paper versus electronic waste?

These moments of uncertainty were also potential moments of learning, but only when they were accompanied by the time to reflect. For many during the pandemic, taking time for reflection was not always possible. Many of my teacher friends shared very intense stories about how overwhelming it was in the classroom and/or teaching online during the COVID-19

Pandemic. With the privilege and pace that accompanied my Social Sciences and Humanities Research Council of Canada funding – and as a white, non-disabled, cisgender, male, settler – I spent my lockdowns researching how the internet was impacting students, and how educators might address some of these concerns. Being a student myself, my time offline introduced me to some concerns that – as you will read in the upcoming chapters – followed me throughout the research project: the pace of life facilitated by the internet, or by a lack of it; the expectations, sometimes unspoken, to engage in particular digital practices as part of schooling; the volume of digital media in many people's lives and the ways it can orient us; the web of relationships that undergird and complement digital tools and systems; and the benefits and drawbacks of educational tools when investigated alongside their analogue alternatives. With the time to journal and reflect about these ideas and about the potential consequences of students' digital engagements, I developed the grounding for planning a research project that might facilitate similar inquiries with research participants at a high school.

During my year offline, I read more about George Smith and others who had carried on similar approaches to academic research and began to see how my work could be a kind of institutional ethnography. In line with my activist-ethnographer inclinations, I would work with students' concerns about critical issues related to digital literacy practices and help them understand how their experiences online or with digital tools connect them to the relations that organize the problem or problems that prompted their concerns. I realized that, as with Smith's research participants, the high school students I planned to work with are more knowledgeable about their lives than institutional settings give them credit for, and despite their insider, experiential understandings, students are often treated without formal authority or left out of decision-making processes. Also paralleling Smith, the collective inquiry in my research is

rooted in activism, aiming to uncover everyday, material ways for participants to manoeuvre, resist, or push back against exploitative or oppressive dimensions of systems in which they are enmeshed – in the case of my research, the objectified relations ruling their participation in technological and educational systems.

By working with participants from their standpoints of navigating online and digital systems, I hoped to help students uncover "how their world is shaped...by social processes that go beyond it" (G. W. Smith, 1990, p. 168). Unlike Smith's work that focused on specific regimes of extra-local social processes (the work of police in regulating sex or the public health infrastructure that could deliver treatment to people living with HIV/AIDS), I did not know what extra-local influences my participants' inquiries might uncover but prepared by reading about many of the educational, corporate, governmental, and technological relations that could play a part in coordinating students' digital literacy practices. In Chapters 2 and 3, I breakdown some of the insights I gathered through reviewing literature relevant to my research approach. In Chapter 2, I discuss the scholarly work that helped me define critical digital literacy (CDL) practices, alongside the ideas I learned about while researching institutional ethnography (IE) – the sociology that Dorothy Smith pioneered as she developed many of the ideas she and George Smith had been exploring. Building on this foundation, Chapter 3 looks specifically at some of the literature surrounding potential topics or problematics that might be of concern in an IE organized around supporting high school students to develop more critical understandings of their experiences online and with digital tools or texts.

While completing my candidacy process, I was also working with two teams of researchers who were exploring the use of arts-based approaches in qualitative, participatory research. One of the teams hosts an annual festival for a participatory, arts-based method called

"cellphilming" (Dockney & Tomaselli, 2009; Mitchell & De Lange, 2013) – a portmanteau of cellphone and filming. As I became more enmeshed in a community of researchers who saw value in the participatory potential of cellphone filming, I started to consider how such an approach might support more authentically student-centred participation in my research and be particularly effective for exploring students' standpoints about digital technologies – the very tools involved in the preparation and dissemination of cellphone films. In Chapter 4, I describe a methodological framework for my research that outlines the value of using a digital, participatory, arts-based approach to develop students' CDL practices within an IE framework.

**Research Project**

IE was founded by Dorothy Smith and evolved in conversation with many of her graduate students including George Smith and Alison Griffith. As Smith and Griffith (2022) explained, IE also evolved in conversation with *The German Ideology* where Marx and Engels (1976 [1846]) wrote, "Individuals always started and start from themselves. Their relations are the relations of their real life. How does it happen that their relations assume an independent existence over against them?" (p. 14). For Smith and Griffith (2022), the key to grounding the relations Marx and Engels were discussing – and the way they take on that seemingly independent existence over individuals – is through "replicated texts (whether print or electronic or ...)" (p. 117). With the internet and digital tools becoming more central to mediating much of young people's everyday life in and out of school, the presence of replicated texts has grown exponentially and I believe this makes the regimes organizing students' digital experiences a potent direction for IE research. Developing CDL practices to help navigate the relations ruling students' experiences with digital technologies has never been more complex or more important.

In early 2022, I partnered with a school in Western Canada where I already knew the principal and some of the teaching staff (although not the classroom teacher who I worked with most closely). Over the course of 3 months, I had the opportunity to learn from and with two classes of Grade 8 students, their teacher, and two other educators in the school while I helped facilitate students through inquiries into how their online and digital lives might relate to critical concerns in their everyday and in the world. As I lay out in Chapter 5, I developed research questions and devised a plan for my research, based on the work I had done during my candidacy process. This plan details who I would work with and how I hoped to engage them with my research – both in the collection and analyses of data.

In the second half of Chapter 5, I reflect on some early findings by describing how my research changed from my original plans when confronted with the actualities of students' everyday experiences in the classroom. This involved rethinking my methodological approach and the particular methods that would be most appropriate to answer the research questions I developed for this project. As I began to uncover students' standpoints and identify which aspects of digital literacies were particularly challenging for them to understand, I adopted a more active role in some of the research activities I facilitated. I also invited additional educators to participate in the project. Chapter 5 describes and explains these changes and introduces the guiding questions that helped students begin their cellphone film inquiry projects. Unfortunately, although not surprisingly, I tested positive for COVID-19 while working in the school and had to miss 2 weeks of research activities in the middle of my time at the school. This reduced the number of focus groups I was able to hold. However, I believe it also enriched my perspective on how wellness relates to digital tools – one of the key concerns I will explore in Chapter 6.

Continuing with my findings, Chapters 6 and 7 lay out what I discovered over the course of my ethnographic dialogues – first with my research participants and now preparing my findings for you. Working within the conceptual framework explored in Chapters 2 and 3, these chapters contextualize my doctoral research project, describe it, and share the insights that came out of it. The participants (students and educators) who helped me carry out this research were not the objects of study, but my collaborators in grounding our inquiries into the complex digital forces that are central to our everyday lives. In Chapter 6, I analyze how students' relationships with their cellphones and computers connect them to institutional dynamics that rule the ways they use and are used by (or organized by) digital products. These discussions relate to students' digital experiences at school and in their everyday lives outside school. Chapter 7 looks more specifically at the texts students engage with on or through digital technologies and how those content-pieces stitch students into ruling relations that organize their lives with digital tools and beyond them. While exploring texts that students engage with digitally, Chapter 7 also discusses the arts-based approach that students engaged as part of their research inquiry, developing collaborative cellphone films.

Facilitating students' explorations of the ruling relations involved in their online experiences aimed to help them gain a more complex understanding of and a more critical relationship to digital technologies, instead of getting lost in the clouds. From the clouds to the ground, the arc that this thesis takes can be quite literal. Like understanding the materiality of cloud storage (through CDL practices that consider the ecological repercussions of computers as internet infrastructures) or the materialism of history (through an IE, grounded in Smith's Marxist feminist lens), the arc is about acknowledging and activating our potential as collaborators in the world around us. Tracing this arc involves grounding the profound, material

impacts people's digital experiences have for others and the environment through an approach to research that uncovers the often hidden, extra-local coordination of students' literacy practices by inquiring about their everyday experiences with digital tools. I am interested in this arc as research and as an approach to learning. To that end, my thesis will focus on the learning that came from my doctoral research, both as knowledge and as an approach to education. The penultimate chapter of my thesis, Chapter 8, underlines the overlap between generating knowledge to answer my research questions and developing educational strategies that support students' CDL practices. This chapter highlights how my research reflects pedagogical needs or models that could support students in the development of more CDL practices.

Finally, my concluding chapter reiterates how my study reflects a less dominant understanding of CDL practices, one that turns research attention towards the technologies coordinating students' experiences within school systems and within communities of family, friends, and online users. I return to my research questions and analyze how technological and social relations came together as intersecting regimes governing and transforming my participants' everyday lives. Reflecting on my research questions also gives me an opportunity to explore how pedagogical supports that help students adopt more critical relationships to digital literacy practices can facilitate a clearer and more conscientious navigation of these complex regimes. With a growing dependence on the internet and online tools in most schools, there are more and more instances in which students are actively in relation to the digital texts and technologies that organize their digitally-mediated institutional experiences. Uncovering how educators and schools can develop pedagogical supports that might help students manoeuvre in their everyday online lives more responsibly and effectively is an urgent concern for education in the 21st century.

# Chapter 2: Critical Digital Literacy and Institutional Ethnography

"The conceptual basis of the research is reflexively organized within a materialist understanding of a world that is put together in people's practices and activities."

-George Smith, 1990, p. 635

Even before the COVID-19 Pandemic changed the degree to which schools rely on digital technologies, contemporary educational reforms have often involved introducing new digital tools to classrooms (C21, 2012; Partnership for 21st Century Skills, 2014). It has become increasingly common for schools to rely on internet technologies to communicate with students and parents (Hébert et al., 2022). Unfortunately, the digitization of education has not always been accompanied by opportunities for educators and students to critically engage with the ways digital technologies impact student learning, their lives, and the world (Hassan, 2019; Schleicher, 2015; A. Smith, 2014). In creating a space for such reflections, my research aimed to uncover what it might mean for educators and schools to help students engage digital tools more critically while also providing a model for research and education that aims to provide such supports and improvements to students' CDL practices and digital experiences.

## Overview

In this chapter, I will begin by defining what it might mean for educators and students to inquire towards cultivating CDL practices today. This will lead into an exploration of my conceptual framework for facilitating the development of students' CDL practices, based in Dorothy Smith's writings about IE and informed by literacy scholarship on how meaning-making changes in relation to contemporary human-computer relations. In particular, I will engage Smith's idea of a *problematic* (1987) – the starting point for research in people's experience – to

help focus student inquiry around their everyday experiences in relation to their connections with the internet and digital devices.

To assess how Smith's sociological insights might be useful in educating young people towards the development of CDL practices, my next chapter (Chapter 3) will unpack four dimensions of digital life that I tried to explore with young people based on their own experiential knowledge of each dimension: students' well-being, their learning, issues of social or environmental justice, and issues of data justice. Deepening my understanding of these dimensions helped me plan a collaborative research process loaded with potential without foreclosing the directions in which students were able to focus their inquiries. The background developed in Chapter 3 aims to support research or education that follows Smith's process (1987; 2005): discovery of a problematic (or focus of inquiry) that builds from participants' own experiences and that examines texts (broadly defined) to facilitate participants' inquiries about how their – in this case – digital experiences relate to larger patterns of social organization. I am interested in how this approach to research might help participants develop more CDL practices in school and beyond.

There is a growing amount of research about CDL education (cited below), but much of it is focused directly on the digital literacy practices themselves – reading and viewing or writing and creating texts in digital ways. In most of these approaches, critical discussions of the sociopolitical context of students' lives are only considered as content to explore using digital literacies. In contrast, my own research follows Tara McPherson (2012)'s suggestion that developing CDL practices "necessarily involves more than simply studying our screens and the images that dance across them" (p. 34). My doctoral work focused on doing critical analysis with students, inquiring about the sociopolitical contexts of their digital lives. As in other recent

scholarship that has attempted to update the kinds of critical analyses that may be relevant to CDL practices in light of new forms of technological management and control (T. P. Nichols et al., 2021), my research treats sociopolitical dimensions of the digital practices by which students may engage in critical analyses as fundamental to the project of supporting CDL practices in students' lives today.

Using an IE approach in my research aimed to carve out a space that uniquely centred the students' own experiences as an anchor from which to investigate the critical dimensions of their relationships with digital tools and texts – also explored using digital literacy practices. Smith's sociology helped me develop my conceptual research framework in a way that is particularly compatible with collective, educational inquiries; much like the students in a classroom – her research participants are not objects to be analyzed and managed but rather, they are partners building knowledge from their own lives and experiences as they endeavour to understand the broader social relations coordinating their everyday worlds and experiences. Such an approach aims towards developing CDL practices that are personally relevant, socially engaged, and empowering.

Through a broad review of literature on the relationship between young people and digital technologies, I read about diverse dimensions of students' digital literacy practices and some of the many educational initiatives that have been designed to investigate or support them (cited below). Unlike a traditional literature review, I did not start by strategically choosing search terms and databases. Instead, I had conversations with professors, colleagues, and friends who have experience as researchers or practitioners in the fields of education, computer science, and/or community organizing. I asked them for suggestions of scholars or texts that might help secondary students inquire towards developing more CDL practices and responsible relationships

with the internet and digital tools. I was not only looking for research on practices explicitly discussed in relation to "critical digital literacy," but any scholarship that might ground my thinking on how to engage young people in critical inquiries on a range of topics about the intersections of digital and social life. Consistent with Smith's IE approach, CDL is here "deployed as a descriptive category [that] does not locate a bounded class of events, or states of affairs" (1990, p. 164). Organizing my looking in this way aimed to establish a sense of some of the framings by which others have already been thinking about these things without preempting the process of focusing personal inquiries with young people.

My conversations resulted in a list of several hundred authors, articles, and books which I explored, often using these sources' bibliographies to direct me further. At the same time, I was also reading much of Dorothy Smith's early work that gave background to IE (D. E. Smith, 1987, 1990, 1999, 2005). By capturing what I learned about CDL practices and institutional ethnographic ways of thinking and researching, this chapter and the one that follows give background to the ways in which my doctoral research project aimed to support students' inquiry into how they are situated in the textually mediated relations that undergird digital infrastructures and into what it might mean to develop more conscientious relationships to these texts and technologies.

**Defining Critical Digital Literacy**

In the context of this work, I am using the term *critical digital literacy* (CDL) in line with how it was defined by Avila and Moore (2012). Following research on critical literacy by Lewison et al. (2002) – they described CDL practices as people's experiences with digital media or texts that have the potential for "(a) disrupting the commonplace, (b) interrogating multiple viewpoints, (c) focusing on sociopolitical issues, and (d) taking action and promoting social

justice" (Avila & Moore, 2012, p. 28). As Hinrichsen and Coombs (2014) outlined, CDL can include both how we create or consume content *internally* – our experience on the internet or our digital device – and how we relate to the wider *external* social, historical, and ecological context in which that use happens: "By internal we refer to faculties of analysis and judgment as applied to the content, usage and artefacts of the technology. The external meaning relates to a position regarding the development, effects and social relations bound in technology" (p. 4). Respectively, the internal and external critical dimensions of digital literacies include how we *experience* and how we *relate to* the internet and digital technologies. Although Hinrichsen and Coombs (2014) discussed social relations as only being connected to the external dimension of digital technologies, my engagement with IE suggests we might also investigate the internal experiences of producing, using, and reading the textual content mediated through these tools as similarly knitted into a web of social relations that coordinate people's digital literary practices across time and space.

Although diverse terms have been used, many scholars and educators have been exploring what it might look like to work towards developing more CDL practices with students (e.g., Alvermann et al., 2018; Avila & Moore, 2012; Barron et al., 2014; Carrington, 2018; D'Ignazio & Bhargava, 2015; Garcia et al., 2015; Hinrichsen & Coombs, 2014; Ito et al., 2013; Jenson et al., 2014; Leander & Burriss, 2020; Lee & Soep, 2016; Mihailidis, 2018; Morris & Stommel, 2018; Payne, 2019; Penuel & O'Connor, 2018; Rowsell, 2013; Shin, 2015; Stornaiuolo et al., 2017; Vasudevan et al., 2014; Vossoughi et al., 2016; Weidler-Lewis et al., 2020; Yanez et al., 2019). In this chapter, I consider the value of adding an IE lens to these kinds of educational inquiries. Because the investigations of IE studies are into texts and organizations, *not* people (D. E. Smith, 2005), an IE approach to developing more CDL practices focuses not on individual

students themselves but on the ways in which individual students' digitally mediated experiences are socially organized by texts and technologies to produce the experiences students describe. Directing explicit critical attention to their everyday online compels students towards a social analysis that can help them develop personally relevant CDL practices. I am calling these practices critical, in part, because of their potential to empower action and change within the reflexively organized and unfolding relations organizing social life. As Luke (2012) described, critical literacies value the technical mastery of certain practices as "a means to broader human agency, individual and collective action" (p. 6). My research aims to explore how uncovering the ways in which students are part of the social relations coordinating their digital lives can help them exercise their individual and collective agency more and more responsibly while interacting with digital or online technologies.

***Broadening the Literacy Situation***

In Natalie Fenton (2016)'s *Digital Political Radical*, she detailed the history of critical theory at the Frankfurt School in the 1930's and discussed its director, Horkheimer's insistence that a critical theory has "a specific practical purpose: to seek human emancipation, 'to liberate human beings from the circumstances that enslave them'" (p. 4). Although I would refrain from using the idea of slavery metaphorically, I am also committed to a critical theory like Horkheimer's that – in relation to digital literacies – undertakes an inquiry that "can explain what is wrong with current social reality, so it can evaluate society, identify the actors to change it, and provide both clear norms for criticism and achievable practical goals for social and political transformation" (p. 4). However, in line with IE, that inquiry is not about identifying problems in abstract senses and asserting them at students, but rather inviting students to identify problems and possibilities from the material relevancies of their lived experiences (D. E. Smith, 2005).

A person's potential digital literacy, considered in this kind of critical way, relies on a broad conception of the factors and texts that contribute to how meanings arise in literacy situations. I am following Stornaiuolo et al. (2017) and Snaza (2019) in framing literacy situations generously and "deliberately attending to how people make meaning across interactions among people, things, texts, contexts, modes, and media" (Stornaiuolo et al., 2017, p. 72). In Snaza (2019)'s conception, literacy events "are only possible because of a trail of other affective encounters among heterogenous agencies and matters in the literacy situation" (p. 64). In the case of digital literacy, these heterogeneous parts include machines, raw materials, assorted texts, the agencies and lives of the students, of other people online, and of the workers involved in creating and maintaining our digital devices and infrastructures. Leander and Burriss (2020) suggest that we ought to even consider the agency – or something like agency – of the machines, and perhaps even of the heterogeneous materials that we rely on for them to function – the metals, data centres, energy, and so on. In a recent article, they presented a vision of a new "posthuman" CDL that – building on Snaza (2019)'s work – focuses on "how computational agents shape us and we them" (p. 13). Leander and Burriss (2020) suggested that "our senses of ourselves and our associated senses of our individual agency are intertwined with machine selves and agencies" (p. 11). As Snaza (2019) wrote, "In 'learning to appreciate how the human is also the product of that which lies beyond human contexts' (Kohn 2013, 15), we can learn to affirm alternative possibilities for performing the human, and performing literacy" (pp. 64-5). This approach to CDL looks beyond just the direct experience of reading or writing the internet to consider how these heterogeneous agencies that are part of that experience are impacting or impacted by students' digital lives.

Stornaiuolo et al., (2017) explained that many contemporary literacy scholars have moved past a conception of literacy as happening only within individuals and instead "highlights how meaning making and power are intertwined in and distributed across social and material relationships" (p. 72). Such a blending of social and material ontologies fits within an IE frame which also treats the social as material, seeing both people's experiences and the existence and functioning of technologies as comprised of or dependent on people (D. E. Smith, 2005). Although IE always starts with and returns to people's local experiences of their everyday, it also depends on inquiring beyond their everyday – connecting individuals to other humans' and to extra-local social or material realities (D. E. Smith, 2005). Ideas associated with IE are therefore able to background and support research through which students investigate their place in the social and ruling relations organizing their digital lives and the material realities of the internet. As I will discuss further in the following section on Smith (1987)'s problematic, the importance that IE places on anchoring research in people's everyday can help direct this investigation towards how students can assert their agency critically even when intertwined with computer-related processes.

Leander and Burriss (2020) advocated for a similar approach, inviting researchers and educators to go beyond thinking about CDL practices as learning about digital texts, and instead work towards CDL practices "where human agents can leverage computational machines and processes to become more ethical assemblages with them" (p. 13). As Chapter 4 explores, the digital, participatory visual research I aimed to accomplish with high school students for this dissertation took Leander and Burriss up on this challenge. I provided students with opportunities to use digital technologies self-reflectively – inquiring about them by using them – in order "to become more ethical assemblages with them." Following Snaza (2019)'s lead, Leander and

Burriss (2020) gave momentum to a conversation about how Artificial Intelligence (AI), machine learning, and related digital infrastructures like algorithms and bots might affect students and their ability to make meaning from texts they encounter online. In a world where the internet and its computational agents are increasingly involved in mediating young people experiences, students can benefit from being "able to identify and interrogate networks of computational and human agents that permeate literacy practices" (Leander & Burriss, 2020, p. 2). My doctoral research aims to support education that can help students develop these kinds of CDL practices.

### *Critical of and with Digital Technologies*

By using the term *critical* digital literacy as part of an IE inquiry, I mean that I worked with an understanding of CDL practices that was primarily concerned with the sociopolitical (Hinrichsen & Coombs, 2014) or sociocultural context (Luke, 2004) of young people's encounters with digital texts and tools, and secondarily focused on the conventional reading/writing proficiency of individual students in digital spaces; I was most interested in supporting students' critical explorations *of* digital literacy technologies, but also interested in the overlapping concern of supporting students' critical explorations *with* these technologies. McPherson (2012) went so far as to suggest that focusing on the explorations with these technologies ("questions of representation and of narrative and textual analysis" [p. 34]), as CDL education tends, risks being "a distraction from the powers that be" (p. 34) or the "organization of the world" (p. 35). McPherson (2012) does not suggest we therefore neglect conventional digital literacy studies, but rather that we extend them towards "new hybrid practices...and new modes of collaboration" (pp. 35-6). Applying CDL practices to the study of CDL practices in my doctoral research aimed to be one such hybrid extension where students could inquire about digital technologies while deepening their applied or technical understandings of them. Garcia et

al. (2015) insisted that “when literacy instruction is conceived in an academic vacuum, apart from the daily lived practices in which it is embedded, it loses both its power and its relationship to real-world outcomes, such as civic engagement (Dewey, 1916)...self-actualization (hooks, 1994)...[and] ‘democratic and emancipatory change’ ([Freire & Macedo, 1987,] pp. 141–142).” (pp. 152-3). This research tried to refocus literacy education in schools, looking beyond narrow technical disciplinary confines and investigating students’ everyday experiences, empowering them towards the civic engagement, self-actualization, and emancipatory change that Garcia et al. (2015) discussed.

In line with these more holistic, political, and sociological goals, Luke (2004) defined critical literacy education as learning about systems that organize the social fields of everyday life. This chapter explores why IE is a valuable approach for investigating these fields and organizing systems. This goal is ideal for IE work because – as I examine more below – IE is designed to investigate how everyday social relations are coordinated into objectified forms of relating that Smith calls *ruling relations* (D. E. Smith, 1987). Although IE is centred on participants’ – in this case students’ – experiences of their everyday, investigating the hidden or extra-local relations organizing students’ digital literacy practices supports deepening their understandings of the everyday – bolstering their potential to engage with digital technologies more critically. Uncovering the social relations that organize students’ digital literacy practices becomes more complex and obfuscated because of the intermingling of various human and computational entities that – as Snaza (2019) and Leander and Burriss (2020) highlighted – characterize the ways we make or find meaning in the Global North today. IE was developed out of the idea that we often need to be supported (or at least explicit about our efforts) to trace and navigate social relations (D. E. Smith, 2005). This need is exacerbated by the intricacies of new

technological infrastructures. My research aimed to help students' everyday usage of digital tools by focusing on and beyond their experiences with these technologies as they tried to figure out how they might negotiate the often-convoluted social relations coordinating their online lives. Following Garcia et al. (2015), "The ultimate goal in this model of literacy is not just comprehension, or even interpretation and critical analysis of texts, but social transformation" (p. 154).

**The Problematic of Institutional Ethnography**

In her 1987 text *The Everyday World as Problematic*, Dorothy Smith characterized the "character and organization of the everyday world" (p. 92) as "neither transparent nor obvious." (p. 91). She insisted that "[w]ithin our everyday worlds, we are expert practitioners" (1987, p. 110), but described how the everyday world "is not fully understandable within its own scope. It is organized by social relations not fully apparent in it nor contained in it" (D. E. Smith, 1987, p. 92). More specifically, Smith explained that how our everyday worlds "are knitted into the extended social relations of a contemporary capitalist economy and society is not discoverable with them" (1987, p. 110). By tracing these extra-local influences within our capitalist economy, an IE inquiry can help an individual discover society and situate themselves within the social relations by which their experiences are being coordinated. This awareness can help a person or community navigate their everyday worlds while laying groundwork for collaborative change efforts. Writing more than 3 decades after Smith (1987), the organization of our everyday world has become even less transparent as the textual mediation of ruling relations becomes increasingly computerized, automated, and obscured from our everyday awareness or control (Leander & Burriss, 2020; Snaza, 2019). Taking an IE approach to researching the concerns high school students have about their digital lives aims to help "open up those aspects of [students']

experience of intersections with ruling relations that can be identified as contributing to the problem or problems that awakened concern" (D. E. Smith & Griffith, 2022, p. 77).

### *Thinking Together: Smith's Problematic and Coordered Relations*

In Smith's pioneering work, she wrote about the value women can gain in connecting with one another via their experiences (D. E. Smith, 1987). She demonstrated how woman can collectively uncover shared experiences that reveal patterns about which these women may not have previously been aware. In so doing, Smith began "enabling a scientifically grounded knowledge of the actual workings of translocal social relations" (D. E. Smith & Griffith, 2022, p. 79). James Gee (2015) explained something similar about students' collective potential to generate knowledge that can transcend their individual awareness; he said that they "learn from experiences they have had and shared with others. They find patterns in these experiences with the help of good teachers" (p. 130). With online communities, people with shared experiences can find each other more readily, often coming together through hashtags like – for example – the #MeToo movement (Tolentino, 2019). In Smith's early work, seeing the way a group of people who, by virtue of their participation in social relations and gender (i.e., being women) were caught up in ruling relations in similar ways, allowed them to identify something beyond their immediate experience coordinating their actions in connected ways (D. E. Smith, 1987). Gee (2015)'s approach similarly centred the importance of the social to contextualizing and understanding diverse digital texts and literacies. Today, the technologies of the internet have made this more possible than ever, even as digital infrastructures contribute to the obfuscation of relations that makes the need for such an approach more and more urgent.

Inquiring about the internet with students and educators, my research brought students' everyday perspectives together – supplemented with other perspectives that they encountered

through online inquiries – to help them consider which extra-local factors may be obscured from them in their local worlds but may nevertheless be contributing to the coordination of their experiences. The everyday experience of real people, or rather the relations by which their everyday world is organized, is Smith's problematic (1987; 2005). She does not use the concept of a problematic in the conventional way "to talk about matters at the level of concept or theory" (D. E. Smith, 1987, p. 91). Instead, Smith (1987) locates her problematic "at the level of experience and action...as a property of an actuality lived and practiced" (p. 91). Anchoring her research in people's lives and experiences but focusing on the institutions or texts organizing them (not focusing on the people themselves), Smith uses this concept of a problematic to connect "an actual aspect of the organization of the everyday world (as it is ongoingly produced by actual individuals) into a systemic inquiry" (D. E. Smith, 1987, p. 110). Working towards developing more CDL practices and applying Smith's orientation to the discussion of a problematic allowed students to focus systemic inquiries around something they cared about and knew about personally in their everyday experience of their local worlds. It supported students to investigate how their experiences are shaped extra-locally, seeing how their digital experiences are knitted into the social relations in which they all participate. The personal relies on the collective as it "responds to the practical ignorance [we have] of the determinations of our local worlds so long as we look for them within their limits" (D. E. Smith, 1987, p. 110). Working collectively and bringing in various perspectives builds towards developing more CDL practices by sharing experiences and tracing the extra-local organization of participants' digital lives.

IE work relies on a dialectical balance between people's expertise in their local everyday world and external ideas that – as described – are only accessible socially. Luke (2012) insisted that critical literacy can either be organized around a "critique of the world portrayed in media,

literature, textbooks and functional texts" (p. 8) or it can "begin from learners' worldviews, in effect turning them into inventors of the curriculum, critics and creators of knowledge" (p. 8). An IE framework aims to bring these two approaches together, beginning from students' lives and interrogating how texts coordinate their experiences. Smith (2005)'s problematic "recognizes the real interpenetration of the present and immediate with the unknown elsewhere and elsewhen and the strange forms of power that are at once present and absent in the everyday" (p. 41). If students or research participants are out of balance and rely too much on their present and immediate local expertise and experience, they may not be aware of the influences coming from texts' "elsewhere or elsewhen." If this social or institutional character of the problematic remains hidden, students may make personal changes that do not address social and ruling relations, or they may not even see a need to seek out change at all. Inquiring around a problematic in IE does not aim "to explain people's behaviour but to be able to explain to them/ourselves the socially organized powers in which their/our lives are embedded and to which their/our activities contribute" (D. E. Smith, 1999, p. 8). Facilitating an IE inquiry with students participatorily ensured that the relations they uncovered served their lives in personalized and empowering ways locally and had the potential to reach beyond their experience towards structural and collective impacts. In the following chapter, I will look more specifically at how educators and students might benefit from inquiring around the problematic of the everyday internet.

Awareness alone is often insufficient for motivating change and action. However, without it – without considering a problematic as such – change and action are not even thinkable. Smith (1987) framed awareness of the extra-local as the goal of inquiry and the key to navigating ruling relations that may seem to overpower an individual or community. What may seem like rigid, hegemonic relations are also the "ongoing coordering of actual activities accomplished in

definite local historical settings" (D. E. Smith, 1987, p. 141). *Coordering* implies that we, within our definite, local, historical moments are co-organizers of our everyday lives, alongside or entangled with others who often operate remotely and in hidden ways. Even online or in digital contexts where we become intertwined with non-human agents, we have some degree of agency over how we engage with the extra-local ruling relations that Smith's sociology aims to uncover; students' relations to the internet and digital technologies do not determine their experiences online or with these tools. However, if we do not engage critically or uncover how we may be implicated in and influenced by the ruling relations of big tech, we may begin to conceive of these relations as unchangeable or beyond our control.

Practitioners of IE contend that "the mutual determination of relationships between positions can be grasped once the underlying relations are brought into view" (D. E. Smith, 1987, p. 135). Grasping these relations repositions us to inquire towards mutually determined change; the objectified ruling relations that once appeared to stand over us become personal aspects of the social relations organizing our everyday activities and behaviours. This seems to be precisely what Smith intended by bringing the term problematic out of its conventional use explaining theoretical concepts into the everyday for people to use as a way to inquire around their personal and social experiences (1987). The goal of empowering students to understand and manoeuvre within the social relations organizing their digital lives involved similarly demystifying the seemingly objectified status of ruling relations and the seemingly agentic digital realm. Once traced such that students could better understand how they were part of these relations of capital and exchange, the less these relations seemed to just be "forces standing over against them and overpowering their lives" (D. E. Smith, 1987, p. 133).

***Agency or Automation: The Social Relations of Computers***

Much of Smith's work over the years has focused specifically on how capital and exchange factor into the texts and relations coordinating people's experiences (1987, 1990, 1999, 2005). The internet enables populations to experience more and more of their everyday in digitally-mediated ways, and this opens new potential for more of our everyday to be tied to capital and exchange, at times beyond our awareness. As Leander and Burriss (2020) pointed out, as our lives are lived increasingly online, we are becoming "ever more mediated by tools and agents that are produced and maintained by corporations" (p. 7). And as Nichols et al. (2021) explained, the potential value that technological supports might offer to students are threatened by their increasingly sophisticated "regressive tendencies toward surveillance, control, and market-optimization" (p. 345). Over 2 decades ago, Smith (1999) was already aware that computers were changing the way our everyday was being coordinated:

> Accounting and related textual technologies of management coordinate local work processes at the shop-floor level, or of consumers in malls, supermarkets, and in other companies, or in the office, with the conditions of capitalist accumulation, tying them in to the relations of capital investment in banking, the stock market, and so on. (p. 88)

In pointing out that digital technologies help coordinate how local work and consumer processes are organized by the ruling relations of our capitalist society, Smith was not asserting that the relations of capitalist accumulation determine actual people's everyday activities. Rather, she was tracing these relations with her research participants so that they could actively avoid being controlled or determined by them. Discussing women in particular, Smith (1990) wrote that people "are not just passive products of socialization; they are active, they create themselves" (p. 161). They are "skilled, make choices, consider" (D. E. Smith, 1990, p. 203). However, Smith (1990) insisted that in some cases – such as in women's "self-creation...[with] clothes, makeup,

shoes, accessories, etc." (p. 161), for example – "people's actual activities as participants give power to the relations that 'overpower' them" (p. 161). The way women create themselves while participating with the market forms a dialectic whereby they are both passive and active. It is insufficient to imagine women's self-creation as totally controlled by their individual agency or totally structured deterministically; rather, people are coordered and in control.

Sara Ahmed (2006) described this coordering by reminding her reader that the lines of convention "are both created by being followed and followed by being created. The lines that direct us, as lines of thought as well as lines of motion...depend on the repetition of norms and conventions...but they are also created as an effect of this repetition" (p. 17). An IE inquiry and education for developing more CDL practices seek to understand how to negotiate norms and conventions online and navigate this dialectic between "the active and creative subject and the market and productive organization of capital" (D. E. Smith, 1990, p. 161). For my research, this understanding aimed to support students as they manoeuvred how their everyday practices are knitted into relations that seem to be overpowering them. Texts can be traced back to people's experiences and labour, but texts also allow the coordination of our everyday to appear disconnected from human realities. As the mediating role of digital texts or technologies becomes more and more ubiquitous and sophisticated, it may be more difficult to trace how users give power to relations that overpower them, but it has also become more important.

As Leander and Burriss (2020) explained, trendy concepts like AI, computational agency, and machine learning signal just how far removed people treat contemporary digital devices, platforms, or texts from the humans involved in moderating and controlling them. Discussing things with these conceptual framings (i.e., intelligence, agency, learning) risks losing sight of the humans designing or served by these texts and technologies. Even corporate interests

represent human agency, albeit often mediated through the ever-lengthening arm of digital technologies. When people write or talk about the so-called "'intelligent,' [or] 'responsive' nature of computational devices…[it] obscures the dynamics of software development and the partial, additive quality of the development of interactive possibilities" (Fuller & Goffey, 2017, p. 221); Artificial Intelligence hides the intelligence of the developers and users of a computational object. Fuller and Goffey (2017) explain what this means on a sociotechnical level in their chapter exploring how computational objects capture and codify human agency; they described how the inner workings of computer programs are often intentionally hidden through a process that computer scientists and software engineers call "encapsulation" (pp. 224-6). Encapsulation restricts "the programmer's ability to gain access to lower levels of operation (whilst theoretically making it easier to write code)" (Fuller & Goffey, 2017, p. 224). Although this may jeopardize human agency, it does not actually constitute an alternative agency originating in non-human programming. Fuller and Goffey (2017) demonstrated that the opacity of computational objects is not because "the sociotechnical practice of programming does not know what it is doing" (p. 226). Rather, they highlight how computer programming with AI can produce situations "in which one does not know what one does does" (Fuller & Goffery, 2017, p. 226), and perhaps cannot know. Inquiring with students around their everyday digital lives does not need to be an overtly technical pursuit in order to recognize and reflect on the "obscurity, unknowability, and ignorance" that Fuller and Goffey (2017, p. 219) claimed are generated by computational objects. Much of the contemporary literacy research I have cited in this chapter is similarly concerned with the unknowability of computational processes and objects (Leander & Burriss, 2020; Snaza, 2019; Stornauiulo et al., 2017). These scholars have highlighted the complexity of the mesh of social and material factors that come together in the emergent digital

assemblages through which humans make or take meaning in literacy situations. Although they sometimes frame students or humans as entangled with computers in ways that complicate the potential for autonomous control in literacy situations, the central concern of their research remains aligned with an IE approach: to empower people to deepen their understanding of social relations (in this case, insofar as they relate to digital literacy situations), thereby improving their ability to manoeuvre within them, however "contingent, [and] unstable" (Stornauiulo et al., 2017, p. 76) these relations may be. The resulting inquiries may be "indeterminate, [and] unbounded" (Stornauiulo et al., 2017, p. 76), but they have the potential to impact participants' everyday experiences with digital texts and technologies in specific, material ways.

When Leander and Burriss (2020) used the term "computational agency" (p. 4) – following Tufekci (2015) – they discussed obstacles to human agency, not a cohesive and independent intelligence on the part of machines. Anticipating the work of Leander and Burriss (2020) and others (e.g., Snaza, 2019; Stornauiulo et al., 2017), Anna Tsing (2015) discussed how humans change as we become assemblages with various non-human elements of our world: "Patterns of unintentional coordination develop in assemblages" (p. 23). Tsing (2015) explored how our "ways of being are emergent effects of encounters" (p. 23). These unintentional, emergent effects may not be known by or even knowable to the humans involved in the encounter, but unlike non-living elements with which we may be entangled, humans have the potential to trace these effects and explore them consciously to support human agency. Smith's early writing may not have anticipated the degree to which AI and machine learning could automate texts or create automating texts, but even automation is coordinated and organized by humans and with aims that serve certain humans at the expense of others. Although digital technologies mediate what humans create and influence how future relations unfold, humans are

creating these digital tools and we are using them. What results from these tools is partially ordered by the technology or the people who created it, and partially by how the technology is "worked on by others" (Sara Ahmed, 2006, p. 50), like us and our students. Leander and Burriss (2020) uncovered how we might renegotiate human agency in the coordered relations of our digital age, but they write as if we must work in tandem with non-human agency that appear beyond our control. By investigating the obfuscated relations that may appear as non-human or computerized agents, this chapter and the one that follows aim to clarify ways that students and educators can reassert their power or, when that is not directly possible, advocate for digital spaces through which they can have more critical awareness and control.

Discussing non-human agency may seem at odds with an IE lens so firmly centred on people, but the idea of non-human things – like texts – organizing people's actions and consciousness is at the heart of IE. Non-human "agency" can fit snugly within an IE lens when this so-called agency is considered ironically as latent or misunderstood human agency whose potential has been muddled within sometimes intentionally hidden and often complex technical, economic, or political ruling relations. Much like Marx' aim in *Capital* (1976 [1887]) "of tracing the genesis of this money-form" (p. 71) and demonstrating that the amount of money that a commodity's is worth is "purely social" (p. 84), an IE approach to developing more CDL practices today aims to trace and demystify computational agency or machine learning and uncover the social relations that coordinate it. Marx warned in *Capital* (1976 [1887]) about what happens when humans forget how they are involved in coordinating the value of commodities. Similarly, if we do not figure out how our everyday actions are part of organizing the digital world, then our current technologies will seem to work objectively instead of through social actions; these machines might "rule the producers [i.e., us] instead of being ruled by them"

(Marx, 1976 [1887], p. 108). Considered as unknowable, the idea of computational agency could further obscure the role of humans' everyday in the organization of the ruling relations that coordinate our digital lives. If we accept that we cannot know how we are involved in the social processes responsible for our everyday internet, then we cannot be consciously involved in them. However, getting involved can be as simple as reframing our connection with these relations as difficult to trace and perhaps impossible to know definitively, but still something we can benefit from investigating. In writing *Capital* (1976 [1887]), Marx hoped that readers could regain control of ruling relations by recognizing their role in connection to larger economic organizations of power. An IE approach to developing more CDL practices works with a similar aim: to transform so-called *Artificial* Intelligence online from something that appears as objectively organizing our everyday into something centred in human intelligence that we ongoingly co-organize, and hopefully can improve.

***Dialectical Discourses: Tendencies in Textual Mediation***

As a site of inquiry, Smith is interested in the "textually mediated discourse" (D. E. Smith, 1990, p. 161) that organizes the dialectical relationship between research subjects and market capital. *Discourse* is understood generously in IE as mediated by any texts or textual processes that directly or indirectly play a role in people's understanding of or behaviour in their everyday worlds (D. E. Smith, 1990, 2005). For example, when discussing women's understanding of femininity, Smith (1990) inquired around the discourse formed by the texts "in women's magazines and television, advertisements, the appearance of cosmetics counters, fashion displays and to a lesser extent books...Discourse also involves the talk women do in relation to such texts" (p. 163). Smith (1990) went as far as to discuss a woman's "personal appearance as text" (p. 164). For my research, my sites of inquiry were texts that mediate student

discourse in relation to the internet or digital technologies and texts that operate on or through online or digital spaces. As introduced in my discussion of the generous understanding of texts in posthuman literacies, what might be considered a text within this approach is broadly defined and open. Smith's similarly broad and open conception of a text (1990, 2005) allows institutional ethnographers to consider texts as anything that has the capacity to organize action and consciousness across time and space. For my study on students' digital literacies, texts included multi-modal content-based texts, the way students represent themselves or engage online, algorithms or the data with which they operate, and – in line with recent IE work on paramedics' use of computerized technologies (Corman, 2017) – the digital devices or platforms themselves.

Langdon Winner also understands digital tools expansively, but instead of exploring them as texts, he considers how they "are institutions in the making" (Winner, 2020, p. 54). Writing in the 80's when the first edition of his book was published, Winner (2020) explained how a digital technology's "operating requirements…simply will not work unless human behavior changes to suit its form and process. Hence, the very act of using the kinds of machines, techniques, and systems available to us generates patterns of activities and expectations" (p. 11). Winner was not suggesting that technologies cause or determine how people "work, communicate, travel, consume, and so forth" (Winner, 2020, p. 28). He saw determinism as "much too strong, far too sweeping in its implications to provide an adequate theory" (Winner, 2020, p. 10). Rather – like Bruno Latour wrote in the early 2000's, in his work to demystify the social processes by which scientific knowledge is produced – digital devices "might authorize, allow, afford, encourage, permit, suggest, influence, block, [or] render possible" (2005, p. 72) certain activities, behaviours, or attitudes.

Ahmed (2006) echoed these ideas, asserting that “it is not simply that some bodies and tools *happen* to generate specific actions” (p. 51, italics in original). She traced this idea of objects or technology as “tending toward” certain capacities for action all the way back to Heidegger and Marx in discussing an object or technology as “not just material, although it is material: the object is matter given some form or another where the form ‘intends’ toward something” (p. 46). By reframing our technological instruments as priming people towards certain and particular orientations, Ahmed (2006, p. 49) was explicitly not suggesting that our devices have intentions apart from humans. Following Latour (2005), Ahmed (2006) described objects and subjects as entangled hybrids and she formulates agency as a matter “of how bodies come into contact with objects” (p. 188). By framing objects as she does, Ahmed echoed Winner’s sense of these tools as “social” (Sara Ahmed, 2006, p. 188) or “institutions in the making” (Winner, 2020, p. 54). In other words, digital tools and technologies themselves are texts that tend to organize or coordinate (or “authorize, allow, afford, encourage...” [Latour, 2005, p. 72]) users in particular, shared ways.

In a 2017 article describing technical solutions for improving the internet, Andre Staltz wrote about “why it is important to analyze technical systems from an economical and societal perspective: because early design decisions foreshadow certain social orders” (n.p.). In the examples Staltz discussed, thinking of a technical system as a text can help users learn about the coordination of social relations – what Staltz called “social orders.” When technological tools are looked into as institutional texts, users can understand more about the realities foreshadowed by them, or the hidden and implicit messages that they contain. In her essay on the “presentation of self in everyday internet” (p. 14), Jia Tolentino (2019) wrote about this, inquiring how

> [o]ur world would be different if Anonymous hadn't been the default username on 4chan, or if every social media platform didn't center on the personal profile, or if YouTube algorithms didn't show viewers increasingly extreme content to retain their attention, or if hashtags and retweets simply didn't exist. (pp. 28-9)

Looking into how the formal aspects of a digital text may be organizing or coordinating our actions and consciousness can help us navigate online spaces and work towards a richer understanding and control within digital worlds. Staltz (2017) encouraged this in relation to considering how the infrastructure of the internet informs the economic structures that coordinate users' access to different services on the web.

Focusing on the inter-relations between technology and culture, McPherson (2012) also argued for the role computers play in the everyday as "encoders of culture" (p. 36). McPherson (2012) traced the values that explicitly went into designing early computer operating systems like UNIX – programming things as (a) "discrete and interchangeable parts" (p. 26), in (b) "[a]bstract...[g]eneralize[d]" (p. 27) ways, and (c) "encapsulated" (p. 26) to hide the inner workings of each part – and how these design decisions implicitly influence the social relations that organize "racism and racial understanding" (p. 30) in a neoliberal state – (a) "in which a troublesome part might be discarded without disrupting the whole" (p. 26), (b) in which society "separates object from context (p. 27), and (c) in which people embrace "a mode of partitioning that turned away from the broader forms of alliance-based and globally-inflected political practice" (p. 30) and that, through fragmenting knowledge, "underwrite[s] the covert racism endemic to our times" (p. 33). As we adopt different digital and online platforms, understanding that their designs are not neutral can help us have some control over ways our institutions and our everyday lives change in relation to these tools. In Winner (2020)'s discussion of how

technologies inform institutions in specific orientations, or how they "contain possibilities for many different ways of ordering human activity" (p. 28), he pointed out that "different people are situated differently and possess unequal degrees of power as well as unequal levels of awareness" (pp. 28-9) vis-à-vis technology. As the next section will discuss, the aim of my research was to try to redistribute some of this awareness and power (to any extent) with the participants in my research project.

***Webs of Textual Influence: Agency in Elaboration***

As introduced, long before the internet was popular, Smith (1990) acknowledged that "[n]ew computerized methods of production and inventory control" (p. 205) opened up new possibilities for the influence of market through ruling relations. In 1990, Smith had even already used the metaphor of a "web" to describe the "cats-cradle of texts, stringing together and coordinating the multiple local and particular sites of the everyday/everynight worlds of women and men with the market" (p. 167). Smith (1990) looked back to the invention of movable type as facilitating this web of mutually coordinated social relations (p. 167). However, the world wide web of the internet and the increasing sophistication of mobile computing expands and tightens this web of coordination. It is almost like Smith was anticipating a digital era when she wrote about the ways "[p]eople scattered and unknown to one another are coordinated in an orientation to the same texts" (1990, p. 168). Writing just before the new millennium as computers and internet technologies were becoming more mainstream, Smith (1999) saw that the relations organizing our everyday were based "increasingly in computer technologies" (p. 79) and that, because of this, these relations were "being rapidly reorganized" (p. 228). For example, "[i]nformation, knowledge, reasoning, decision-making, 'culture,' scientific theorizing, and the like become properties of organization grounded in and relying on the materiality of the text and

its increasingly complex technological expansions" (D. E. Smith, 1999, p. 79). These technological expansions could refer to the aspects of texts' coordinating potential obscured in a technology's formal affordances and in other users' expectations. As the cats-cradle goes global and the world wide web strings together the texts of more people's social relations in more complex ways, there is a growing need to trace and clarify how users' everyday world is being ongoingly organized by their engagement in digital texts or technological processes that are often not directly visible.

The technologies of computing increase the frequency and quantity of people's discursive and textual experiences and the omnipresence of particular texts (including images, audio tracks, and videos). Smith contended that – even before the internet was mainstream – this "constitutes the tyranny of ideality" (1990, p. 203). In our smartphone age, texts are increasingly with us and, although it was already true of texts when she wrote about them in 1990, Smith's idea that texts' "permanent material form...detaches meaning from the lived processes of its making" (p. 168) is even more stark when discussing virtual texts where the materiality and history of the text is hidden or cut off. These digital texts – floating in cyberspace – still originate in, and go on to shape, the activities and ideas of actual embodied people – the materiality of their/our lives. However, removed from the grounds of their production, the potential of these texts to coordinate people is more easily manipulated. As Winner (2020) pointed out, without "the kinds of face-to-face contact that once provided important buffers between individuals and organized power...[people] become even more susceptible to the influence of employers, news media, advertisers, and national political leaders" (p. 116). Government and industry, now including big tech corporations, "coordinate[] or seek[] to coordinate the multiplicity of local sites within

which desire is translated into demand for the commodities it produces" (D. E. Smith, 1990, p. 173).

Far from the 20th century dream of a decentralized, user-driven internet (Turner, 2006), as more of our experiences are mediated digitally (often by corporations), our understanding of the world becomes more economically reified, and these abstractions stick, becoming more real-seeming than the social relations they are meant to capture and describe. The ways our local, everyday worlds are represented in texts seem to ossify into what may appear to be objectified ruling relations "anchored in, while never reducible to, economic relations" (D. E. Smith, 1990, p. 207). In this way, "large sociotechnical organizations exercise power to control the social and political influences that ostensibly control them" (Winner, 2020, p. 48). People's desires – seemingly free and self- or socially-motivated – are funnelled through economically-motivated coordination, or inversely, as Tolentino (2019) put it, "commerce has filtered into our identities and relationships" (p. 15). Because the people who "might regulate technology-based systems are often subject to manipulation by those very systems" (Winner, 2020, p. 48), there is less potential for social relations to be organized around "other [non-economic] grounds" (D. E. Smith, 1990, p. 173) like wellness, equity, justice, pleasure, etc.

As discussed, Marx (1976 [1887]) was concerned with how to encourage people to support the organization of social relations along non-economic grounds. In *Capital* (1976 [1887]), a foundational text for Smith's development of IE (D. E. Smith, 2005), Marx clarified how money and labour are turned into value through the ways humans frame them within social relations. In so doing, he suggested a way out of economically reified realities. Discussing these rigid ways of understandings money and labour, Marx insisted in "A Criticism of the Hegelian Philosophy of Right," that "these petrified conditions must be made to dance by singing to them

their own melody! The people must be taught to be startled by their own appearance, in order to implant courage into them" (2020 [1843], p. 7-8). Like Smith who claimed that "[w]ithin discourse there is play and interplay" (1990, p. 203) (i.e., not determinism), Marx believed "that social activity is an ongoing process of world-making" (Winner, 2020, p. 17). The emancipatory potential of the approaches advocated by Smith and Marx rely on the agency of people in their everyday to uncover their role in the relations organizing the textually mediated discourse that, in return, coordinates their activities and behaviours in their everyday roles.

Smith (1990) unpacked this idea by explaining that "[t]he 'consumer' is not a puppet of the media" (p. 204) and industry "does not control that discourse" (p. 204). It may be true that, with the growing involvement in the internet in our lives, there are less and less spaces where we can avoid the coordinating influence of textually mediated social discourse. However, "[c]oncealed within the ubiquity and apparent uniformity of the texts of discourse and the high skills of their 'manipulations' of the consumer are the resistances" (D. E. Smith, 1990, p. 204). Writing specifically about how texts of femininity coordinate women's everyday worlds, Smith reminded her reader of the resistances found in Black and punk communities:

> When the codes and images are viewed as women use, play with, break with, and oppose them, the discourse of femininity appears not as managed construct of the fashion industry manipulating people as puppets, but as ongoing unfolding, historically evolving, social organization in which women and sometimes men are actively at work. (1990, p. 204)

Especially with the multi-directional affordances of the internet that make it easier for consumers to also be producers of texts that co-contribute to online discourses, "discourse is continually undergoing elaboration, contradiction, reworking at the local level among [people] actively

participating in it" (D. E. Smith, 1990, p. 205). The way the internet's interactivity relates to the agency students may have while using it will be a major focus in Chapter 4 where I explore methodological concerns including how online technologies provide unique potential for students to involve themselves in the reflexively organized and unfolding nature of social life.

Inquiries like those advocated for by Marx and Smith can empower us to activate our agency within this mutually coordered dialectic. As Winner (2020) discussed, inquiring around our digital lives can motivate us towards a livelier form of citizenship on and offline. His recommendations for this included: "to attend public meetings, to join public groups, to march in demonstrations, to speak up in civil gatherings, and to become active in groups that seek to address and improve the institutions and practices of community life" (Winner, 2020, p. 195). As we continue to become an increasingly digital society, it becomes essential to inquire more deeply into our roles – however latent or inactive – within the social relations undergirding the online world. "[W]e must admit responsibility for what we are making" (Winner, 2020, p. 18). In such a way, we can activate these roles and work towards change. As Tolentino (2019) wrote, by using the internet as a part of offline actions, "[p]eople are making the world better through concrete footwork every day" (p. 18). However, the internet "can also feel like a shunt diverting our energy *away* from action, leaving the real-world sphere to the people who already control it" (Tolentino, 2019, p. 17, italics in original). Understanding how we are operating in concert with market forces can help us reflexively orchestrate our textual mediation towards material changes that we value personally and collectively, instead of passively allowing the social relations of the internet to coordinate us as value for industries like big tech.

## Chapter 3: The Everyday Internet as Problematic

"The kinds of things we are apt to see as 'mere' technological entities become much more interesting and problematic if we begin to observe how broadly they are involved in conditions of social and moral life."

-Langdon Winner, 2020, p. 6

To facilitate social analysis with participants (orienting their looking critically such that dimensions of "'mere' technological entities" become our research problematics) I tried to design the participant inquiries for my research as an open-ended, "continual process of making current arrangements problematic" (Cochran-Smith & Lytle, 2009, p. 121). As I will demonstrate in my findings chapters, the research activities I facilitated supported participants to think differently about their ongoing relationships with digital texts and devices, exploring impacts of their engagements with technologies about which they may have been previously unaware. Creating conditions for inquiry during this project provided students with opportunities to investigate how their local experiences of using the internet are coordinated by relations extending beyond the local sites of their experience and hooking them into the relations I pointed to in Chapter 2. Seeing the everyday internet as problematic provided opportunities to learn about these extended relations and disrupt the neutral seeming way in which we often take the internet for granted. Writing about our passive embrace of digital technologies and the accompanying consequences, Winner (2020) suggested that an "interesting puzzle in our times is that we so willingly sleepwalk through the processes of reconstituting the conditions of human existence" (p. 10). We need to wake up (*make the petrified dance,* as Marx might say) and explore the many dimensions of life in our digital age that demand urgent collective attention.

Before I joined my research participants in their classroom, I reviewed some of the literature and theoretical influences that were directing my thinking as I designed this project and carried it out. Even though the focuses for this work start in my experiences, and develop from participants' standpoints, they are also impacted by my engagement with scholarly literature on issues related to CDL practices. The literature explored below informed my project design and the topics that I was most comfortable supporting youth to explore as starting points for their IE inquiries. They were intellectual resources that moderated how I came to the work and why I invited youth to focus on the topics I did, in relation to CDL education. For clarity of discussion, I have organized the scholarly literature I engaged with into four categories: (a) the internet's relationship with one's well-being, (b) the nuanced and rapidly changing connection the internet has to learning, (c) the close ties the internet has to exploitative labour, and to ecological consequences, and (d) the complex and often hidden ways by which big tech companies and state agencies use people's digital data in order to coordinate their everyday experiences on and offline (see **Table 1**). These categories served as anchor points for the social analysis of digital tools and texts that I carried out with participants and the open-ended development of students' CDL practices.

**Table 1**: *Dimensions of the Problematic – Young People and the Internet*

| Dimension: | a. Students' Well-being | b. Student's Learning | c. Social and Environmental Justice | d. Data Justice |
|---|---|---|---|---|

As Luke (2012) argued, the meaning of critical literacy must be ever-changing and responsive to the individual and their context. As I will describe in my findings, the inquiries that I facilitated around these focuses were adapted to and driven by each students' experiences and interests.

**Reviewing Literature Related to CDL Practices**

Smith's IE approach helps research participants uncover the hidden or obfuscated coordination – although not determination – of their local experiences. Bringing the secret or complex relations that undergird digital technologies into view and engaging personal and collective inquiries around them can provide local users or students with greater understanding and potential control over their online everyday experiences and their relationship to the digital technologies – at least as a starting point for community organizing and collective action.

***Students' Well-Being***

Issues related to a students' well-being can often be a barrier to their educational success (Vally & Spreen, 2012). Schools design educational structures with ableist assumptions about the well-being of students, and many students with health-related challenges end up similarly challenged by school (Wendell, 1996). When thinking about the role the internet and digital devices play at schools and in students' lives, concerns about the well-being of users are not always central. However, the more I researched online and digital tools, the more I found possible connections between these technologies and well-being. The intersection of students' well-being and their relationships with digital technologies was a possible problematic I identified in the early days of this project, around which to inquire with students. As I will discuss in my findings chapters, inquiring about this problematic with students involved connecting the concerns I identify here with the embodied experiences students have had with digital tools that may impact their well-being. This dialectical balance extended young people's understandings of their everyday to include extra-local organizational relations that may not have been graspable within their local, everyday experiences alone. Although things like social anxiety, ocular health, and quality of sleep – as examples – may seem like personal deficits when people struggle with them in isolation, these same issues can reveal systemic or collective

challenges when investigated within a social or academic context, using IE to anchor a collective social inquiry. As discussed, IE does not research people; it researches with people about social relations (D. E. Smith, 2005). It is therefore aligned with a social model of disability (Wendell, 1996) that seeks to change society in order to correct misalignments between a person and their environment instead of seeking to change the person as in a deficit model which locates problems with individuals and ignores structural issues.

Beyond sharing perspectives and looking for patterns among a group of student research participants, a collective inquiry within a classroom can be extended with information about what research and experts have already uncovered about the impact digital tools may have on well-being, like in the cases of the above examples: social anxiety (Boumosleh & Jaaloud, 2017; Rushkoff, 2013), ocular health (Kim et al., 2016; Zheng et al., 2016), or quality of sleep (Demirci et al., 2015; Lam, 2014). Identifying shared concerns about students' everyday online practices and then learning how their shared embodied experiences of eyestrain, for example, are shaped by textually mediated discourses provides students with a more critical understanding of their place in the social relations organizing digital experiences. This can uncover how seemingly obfuscated and rigid technological black boxes are actually social relations with which young people are personally and actively participating. By gaining insight into the repercussions of their actions and behaviours in relation to digital tools, students also gain opportunities to take action and make more informed decisions about how to connect online and how to organize and activate more structural and collective changes to their digital practices.

Related to young people's well-being, there is a contentious claim that the internet and digital devices can result in unintentional device overuse and addictive relationships to using online technologies (Bian & Leung, 2015; Jeong et al, 2016; Klein, 2019; Samaha & Hawi,

2016; Yamamoto et al., 2013). Whether or not excessive technology use can or should be grounds for a medical diagnosis is not my concern here. Rather, my research invited young people to gain a deeper understanding of their online habits through reflecting on when or why they feel the need or desire to use the internet or digital tools. Theorists have laid out ways in which using the internet and mobile devices can lead to rigid and unhealthy expectations for one's pace of life (Barney, 2014; Hassan, 2019; Wajcman, 2018). Working with students to trace how or why they may develop unhealthy relationships with the online world aimed to contribute to widening their social understandings and control of their digital behaviours, possibly supporting healthier expectations for students' life pace and their academic productivity. In my findings, I will analyze how supporting students to pose and investigate critical questions about the internet and digital tools in relation to their health and well-being helped students see how seemingly personal online and technological challenges have a collective basis. This primed students to consider changes they may want to make to their digital practices or to their relationship with the internet, as well as actions they can participate in to support structural and systemic improvements. As student inquirers developed more nuanced understandings of how they and their classmates are impacted by their online and digital habits, they became more critical in how they use and relate to the internet and their devices. This may be transformative on its own, but often uncovering how young people's experiences are collectively coordinated in ways that organize disparate users similarly is only a first step, albeit a necessary one, towards advocating for more widespread changes.

***Students' Learning***

As a high school teacher and now a graduate student, my experience is often mediated by digital technologies. I have been asked to use an increasing number of online tools and

platforms: Gradebook, Minerva, MyCourses, MyProgress, YouTube, uApply, WorkDay, Outlook, Slack, Kahoot, Moodle, Doodle, Perusall, Survey Monkey, Google Docs, Google Scholar, Google Meet, One Drive, Microsoft Teams, Twitter, Nvivo, Trello, Zotero, Endnote, Padlet, Jamboard, JSTOR, Prezi, Skype, now Zoom, and the list goes on. Many of these may unlock valuable potential, but so many of them combined become difficult to manage and navigate effectively – let alone manoeuvring the critical questions of how to engage with them ethically. As educators continue to consider how to navigate measures related to slowing the spread of COVID-19 and other illnesses, online tools and platforms for learning are more appealing than ever. In this context, figuring out how to teach effectively online is only one of the issues that needs to be resolved. Embracing remote learning using digital tools creates new norms and conventions that must be critically examined before educators and policy makers accept them as neutral pedagogically, let alone sociopolitically and ecologically. The problematic of how student learning is mediated by the internet and digital technologies was another focus that I identified early in the project as loaded with potential for students' inquiries.

One important area I explored was how the internet can be used to research or validate information. Looking things up online and engaging with digital texts have become central to young people's everyday and a common activity in schools. Many scholars suggest that without literacy education on how to critically engage with digital content, the internet can diminish students' ability to discern expertise and credible information (Collins & Evans, 2017; Peters, 2017; Rainie, 2016). According to scholars like Flaxman et al. (2016) and Karlsen et al. (2017), online information can seem limited because internet users exist in *echo chambers* (also called *bubbles* or *trenches*) of like-minded people, wherein it becomes more difficult to meaningfully engage with new or dissenting ideas. These echo chambers can be self-selected or a result of

algorithmic sorting, and they make critical inquiry more difficult as multiple viewpoints are siloed out of sight or into caricatured extremes (Chun, 2018; Flaxman et al., 2016; Goldzweig et al., 2018; Karlsen et al., 2017). The IE inquiries I facilitated offered participants a space to investigate the problematic of accuracy online, providing students with opportunities for self-reflective education that might help them trace the relations coordinating their internet-based inquiries. As introduced in the previous chapter's definition of CDL, developing more CDL practices demands an engagement with multiple viewpoints that can complicate an individual's local understanding of how they use and relate to digital technologies. The potential to inquire online critically about students' relationships to the internet and digital technologies – exploring multiple viewpoints and extending students' local knowledges – relies on their ability to uncover accurate and relevant information beyond digital echo chambers or algorithmically personalized online content.

This next dimension of this problematic – an *over*-reliance on digital technologies – is difficult to look into without getting caught up in the ableist notion that being reliant on digital tools is a problem and that we all must become independent individuals (Hamraie & Fritsch, 2019). At times though, online or digital tools can undermine certain students' efforts to develop fundamental competencies. This can lead to relationships with technologies that limit students' engagement with the foundational knowledge and skills underlying these competencies. This phenomenon has been investigated academically (Agbo-Egwu et al., 2018), civically (Samerski, 2018), and psychologically (Baek & Ha, 2018). Sara Ahmed (2006) described it as when what we do "opens up and expands some capacities, as an 'expansion' in certain directions that in turn might restrict what you can do in others" (p. 60). Students' use of online or digital tools to support their learning does not necessarily mean that they are obstructing their ability to learn or

develop skills. As Ahmed (2006) contended, “other things remain possible” (p. 61). In helping direct their learning effectively, students can benefit from investigating which capacities or competencies may be supplanted by technologies in ways that may be restrictive and how they might overcome this. Morozov (2013) suggested that this potential extends beyond more explicitly educational competencies to altruistic values: “Automating virtue in one instance...might require automating it everywhere” (p. 327). When digital tools do things for us, we risk losing the ability to do those things ourselves. Lohmann (2019) wrote about this in an article about how digital technologies online have even begun to automate user interpretation, something essential to a critical engagement with texts and experiences.

As we continue to use the internet, we continue to take part in coordering the relations that organize online experiences and infrastructures. As our role in this co-coordination – in the dialectic of our everyday and the apparent agency of machines – becomes more and more automated, it becomes increasingly important for students to consider how their everyday actions and behaviours have power. However, when students cannot see their part in the social relations ruling our digital spaces, they are less able to exercise power within those relations; control remains automated and appears as if it is beyond human agency. This IE inquiry into the foundations of students’ digital literacy practices aimed to uncover ways in which students were able to retain or reclaim an active role within their everyday experience of the internet. Without becoming critically digitally literate in these ways, we risk finding ourselves living within an undemocratic society in which choice and interpretation have become more and more automated and foreclosed (Winner, 2020; Zuboff, 2019a). I will elaborate on this below in my discussion of digital data practices and how they relate to various networks of control.

The changes to how young people engage with the internet and digital technologies have been impacting formal and informal learning for decades. Now, after the COVID-19 Pandemic transformed schools and prompted students to learn more online and informally, we have a greater need and increased opportunities to discuss and develop critical guides to learning online or with digital supports. However, the urgency of the pandemic may have been an obstacle to slow, careful, critical change. The last few years have pushed us to embrace all the digital aspects of 21st century learning, but as we do, we must continue to focus on how to balance the value of the online or digital world with the issues that can arise from particular personal and collective relationships with some technologies.

***Social and Environmental Justice***

Because of the widespread neutral acceptance of digital infrastructures, the young people I worked with were often not fully cognizant of the social or environmental justice issues that underpin ubiquitous technology use. However, students' inquiries around this problematic aimed to reveal that what people do online have consequences that are far from virtual. The benefits and costs of new technologies are unevenly distributed throughout the population (Postman, 1997) and the development of new technologies "is so thoroughly biased in a particular direction that it regularly produces results heralded as wonderful breakthroughs by some social interests and crushing setbacks by others" (Winner, 2020, p. 26). Especially in the Global North and in communities where students benefit from a disproportionate amount of these breakthroughs, a social justice approach to education relies on critically rethinking these structures and imbalances.

One major dimension of this problematic has to do with the human labour consequences of using the internet. By this, I am referring to the workers involved in operating online services

and producing, supporting, and recycling digital tools. These jobs and industries involve exploitative globalized distributions of labour, often along colonial lines (Dyer-Witheford, 2015; Fuchs, 2014; Huws, 2014; Lohmann, 2019; Meekosha, 2011; Nakamura, 2013; Navarro-Remesal & Zapata, 2018; Roberts, 2016; Tricontinental, 2019). Although most research in this area is about labourers in the Global South, there are plenty of issues in terms of how digital technology companies organize labour in the Global North as well; sexist, racist, or otherwise inequitable labour practices and environments are often found within technology companies in North America and Europe (Alfrey & Twine, 2017; Andrews, 2019; boyd, 2019; Chang, 2019; Twine, 2018). The human labour that goes into allowing young people to be online is fairly hidden, especially labour that has been outsourced to countries with less transparent and equitable human rights protections. Exploring this problematic involves bringing these forgotten, exploited workers' experiences into view as a potential direction for student inquiry.

Beyond people, another major material impact of the online and digital world relates to its ecological effects. Researchers are exploring the growing environmental consequences of the internet (Samaa Ahmed, 2018; Terranova, 2007), including the material resources and energy that internet technologies use (Dayarathna et al., 2016; Morozov, 2013; Shehabi, 2016) and the consumerism they promote (Crary, 2014; McGuigan, & Manzerolle, 2015; Slade, 2009) – especially in young people (Theodoridis & Miles 2019). Because the internet is discussed as a virtual world, many of the students I worked with had not considered the material impacts digital tools have on our environment. Reflecting on this with young people had the potential to deepen their commitments to using digital tools in ecologically responsible ways. Some changes may be possible on a personal level, such as avoiding the most energy intensive digital tools or platforms, for example. However, designing this inquiry to uncover ecological concerns related

to digital technologies aimed to provide the background and motivation needed for students to involve themselves with collective action that can promote more environmentally responsible consumer practices in relation to the digital world.

The final dimension in this grouping is quite expansive and relates to prejudice and discrimination both as it is experienced online, and as it is facilitated by how the internet and digital devices are accessed and used. In terms of young people's digital literacies internal to the online world, many researchers have suggested that students portray themselves, comment, and engage online in ways that can contribute to stereotypical understandings of self and identity (Armenta & Ryan, 2016; Dahya, 2016; Hsueh et al., 2015; Nakamura, 2008). Other scholars have written about how online platforms reinforce these prejudices through biased and discriminatory algorithms or data-sets (Benjamin, 2019; Dixon-Román et al., 2019; McPherson, 2012; Noble, 2018; Otterbacher et al., 2017; Wachter-Boettcher, 2017; West et al., 2019). I will discuss the bias baked into online algorithms further in the following section that focuses specifically on data justice.

Besides the discrimination faced by internet users while online, all of these digital activities and infrastructures reinforce class-based and colonial hierarchies external to the internet as they operate across a divide by which wealthy, urban students, and those in the Global North have the advantage of more and better internet access and digital devices than young people from low income or rural backgrounds and those in the Global South (boyd & Crawford, 2012; Fenton, 2016; Garcia et al, 2015; Servon, 2008; Vie, 2007; Vossoughi et al., 2016). This dimension – prejudice and discrimination – reflects powerful aspects of the internet which may have become even more significant as the COVID-19 Pandemic was captured in memes and online discourses, as new algorithms were developed and data-sets compiled to support public

health services, and as schools rushed to get students of all financial backgrounds learning with the support of digital tools. Inquiring with students from their own perspectives and concerns aimed to uncover other important aspects of the problematic that relates their online and digital lives to issues of social and environmental justice. I hoped that students might be able to act more responsibly as they developed digital literacy practices that connected the dots between their own everyday internet and broader issues.

***Data Justice***

This last section explores how students' data is gathered and used in relation to economic systems and other networks of management or control. This discussion fits into many of the previous categories but because of its centrality to young people's CDL practices today, I have explored it on its own here. As Zuboff (2019a) discussed in her recent works on surveillance capitalism, data – or rather, information about our digital practices – has become the most lucrative commodity on today's markets. She framed data as a powerful resource that companies can use to predict internet users' behaviours, prime them to make specific choices, and then profit financially trading in these modified behaviours or so-called *predictions* (Zuboff, 2019a). Considering digital data practices within an IE approach may seem fraught due to how far-removed data often seems from what it represents. Data is an abstraction and IE is built around tracing social relations so as to demystify abstractions and remind us of our agency within them. Choosing to discuss data in its own category reflects the centrality of this aim within IE inquiries that are designed to support students' development of CDL practices. As the mining and utilization of data online is increasingly automated or at least hidden, it becomes more urgent to interrogate our role as co-puppeteers – sometimes passive, sometimes active – pulling on the strings of the world behind our terminals and smartphones.

Besides Zuboff (2019a), many other researchers have been doing similar work, looking into how data that is gathered on young people as they use the internet feeds into recommender or predictive algorithms and extensive relations of capital and exchange (Carrington, 2018; D'Ignazio & Bhargava, 2015; Doctorow, 2020; Nieborg, 2017; Kennedy, 2016; Kop et al., 2017; Payne, 2019; G. Smith, 2018; Tufekci, 2015; Williamson, 2016). Some work on data considers how algorithmic predictions and the related economic motives of big tech companies operate at the expense of users and their attention (Beattie, 2020; Hassan, 2019; Hayles, 2007), jeopardizing users' individuality (Grosser, 2011; Lai, 2011; Lessig, 2004), agency or self-control (Harvey, 2019; Rushkoff, 2013; Van Dijck et al., 2018), and privacy (Nissenbaum, 2010; Siemens, 2013; Young, 2015). I identified these topics as areas ripe with potential for students' IE inquiries, especially considering the degree to which these challenges can stem from the complex and hidden coordination of digital tools and texts, extra-locally. Zuboff (2019b) clarified the importance of exploring obfuscated ruling relations for unravelling these contemporary challenges. In a recent interview, she suggested that the current economic logic of our digital age comes from companies capitalizing "upon the social relations of the one-way mirror" (Zuboff, 2019b, n.p.). By this, she was referring to the corporate practice of taking "private experience for translation into data [which] had to be secret, it was designed to keep us users in ignorance" (Zuboff, 2019b, n.p.). Zuboff (2019b) claimed that uncovering some of the secrets of how data is gathered and used makes it harder for companies to use our data in manipulative and exploitative ways. The logic of an IE inquiry parallels this strategy as both find value in tracing how one is implicated in or connected to the social relations coordinating people's digital practices and the use of people's data on the internet. Exploring how students' digital data and economic engagements online are related to the actions and priorities of big tech

companies and to the experiences and attitudes of other internet users can help students be more critically literate as they navigate and negotiate these companies' attempts to use their data to manipulate and influence their everyday online behaviours and decisions – and the everyday online lives of users more marginalized than them.

Beyond economic motivations for how data is gathered and used digitally, there are growing concerns – as introduced in the previous section on social justice concerns – that AI or algorithmic processes which utilize digital data-sets are liable to reproduce racist, classist, sexist, or otherwise prejudicial outcomes in ways that appear to be objectively calculated (Benjamin, 2019; Dixon-Román et al., 2019; McPherson, 2012; Noble, 2018; O'Neil, 2016; Otterbacher et al., 2017; Wachter-Boettcher, 2017; West et al., 2019). West et al. (2019) explored the works of "many researchers [who] have shown that bias in AI systems reflects historical patterns of discrimination [i.e., "technological redlining" (Noble, 2018, p. 1)]...replicating patterns of racial and gender bias in ways that can deepen and justify historical inequality" (p. 3). What Benjamin (2019) calls the New Jim Code refers to how "tech fixes often hide, speed up, and even deepen discrimination, while appearing to be neutral or benevolent when compared to the racism of a previous era" (p. 11). O'Neil, a data scientist and part of communities who design machine learning systems, expressed similar sentiments about AI models. She claimed that "despite their reputation for impartiality" (O'Neil, 2016, p. 21) these systems are "opinions embedded in mathematics" (p. 21). Using an example, Benjamin (2019) clarified the ways that supposedly objective and neutral technologies reinforce racism: facial recognition programs are designed to help flag individuals who may be criminals but the data-sets used to train the algorithms for these programs include a disproportionately high number of photographs of Black people. This results in an algorithmic bias connecting Blackness and criminality. (Benjamin [2019] also explored

how these facial recognition tools often fail to effectively identify people of colour because they were trained on data that predominantly featured white faces.)

When we think about the ways that we're "tracked, predicted, and racialized" (Benjamin, 2019, p. 45) – to use Benjamin's terms for what Zuboff called being "tune[d], herd[ed], and modif[ied]" (2020, n.p.) – we often just think about the consumer consequences without considering how the algorithmic management and judgment of humans is now a part of policing, legal systems, insurance policies, healthcare bureaucracies, and all sorts of other public and private processes. We might think these systems avoid racist and prejudicial biases, but as Benjamin (2019) pointed out, algorithms judge based on existing data that has been "produced through histories of exclusion and discrimination" (p. 14). When a supposedly neutral and objective computer interprets the data it has been fed on crime – like in the example of facial recognition programs – it assumes Black people are more likely to break the law without considering how this data relates to a historical reality in which police and state agencies disproportionately – and unjustly – target Black people. Judging someone before considering their personal context is literally *pre*judicial. O'Neil (2016) developed a similar argument in her exploration of how AI systems impact people disproportionately based on their wealth or class. Her research uncovered that poor people, especially low-income ethnic minorities, are more likely to be subject to AI management, whereas wealthier people are more likely to "benefit from personal [i.e., human] input" (O'Neil, 2016, p. 8). O'Neil (2016) concluded that machine learning "tend[s] to punish the poor" (p. 8) whose lives are more often impacted by AI systems, unlike wealthier people who are "processed more by people" (p. 8).

Data justice in relation to discrimination is not always an issue of data that reproduces racism or other forms of prejudice. Sometimes the problem is that data fails to capture prejudicial

patterns. This can also reproduce racism when that data is used to make decisions that relate to race (Jean-Pierre & James, 2020). In educational contexts in Canada, lots of high school and universities do not include race when gathering data on students (BCOHRC, 2020; James et al., 2017; Mandhane, 2017). This makes it less likely that people in powerful positions within institutions will notice or change racist realities – or take responsibility for them. Remedying these systems is not possible when we combine the lack of race-based data with the opaqueness of the biased AI systems – opaque in terms of how they work and where they are being deployed commercially (West et al., 2019). Although data, as an abstraction, can obscure the social relations represented by them, robust data understood critically can actually clear up reductive understandings and ground the abstractions of data in the actual, lived or embodied experiences of diverse people everyday.

Leander and Burriss (2020) tried to carve out a space for investigating the role of data in educational research and in classrooms with their aforementioned article on critical literacy for what they refer to as a *posthuman* world. Their work considered how digital algorithms change the ways students understand texts they watch or read online. Students must now "be able to identify and interrogate networks of computational and human agents that permeate literacy practices" (Leander & Burriss, 2020, p. 2). Their concerns relate to students' ability to see past the personalization or selective curation of online texts and to manoeuvre the corporate or state control of digital devices and spaces – what Leander and Burriss (2020) might discuss as the device's agency. Like Leander and Burriss (2020), Zuboff (2019a) and Winner (2020) insisted that the personalization and control facilitated by online surveillance and data mining are unethical as they disrupt the potential for internet users' freedom to choose and think for themselves. Benjamin (2019) and West et al. (2019) agreed, putting forth similar theories that

added ways in which these data practices are even more troubling for marginalized communities. West et al. (2019) and Winner (2020) explicitly explained why addressing these concerns must go beyond technical actors to include a wider social analysis – like the one this research is proposing to undertake with students.

A final dimension of data justice, explicit political control, was a major theme of 2020's Massey Lecture on CBC radio (Deibert, 2020). Deibert (2020) talked about the internet as "a dictator's best friend" (2020, n.p.). Discussing data capture and social media, Deibert questioned how we might regain control within systems that are designed to limit our freedoms and "thwart political opposition and dissent" (n.p.). Contrasting our contemporary digital age with the Arab Spring of 2011, Deibert (2020) traced how digital technologies and the internet now allow despotism, authoritarianism, and state agencies everywhere – including the RCMP in Canada and other hyper-militarized policing agencies in liberal democracies – to organize social relations in more and more sophisticated, centralized, and fascistic ways. This resonates with Winner (2020)'s and Zuboff (2019a)'s aforementioned theories about how new technologies might challenge democracy and lead to inequitable and exploitative economic relations. Benjamin (2019) and West et al. (2019)'s research on racist or sexist uses of digital data sets also speaks to technologies role in the state's growing reach. As the mechanics by which data is being gathered and used become more transparent and understood better by students, they can focus their inquiries towards resisting or challenging prejudicial or predatory algorithms that are based on this data. By inquiring about what data is being used where, when, why, and for whom, students can begin to actively reassert themselves within the social and digital relations that rule their/our everyday experiences online.

**Conclusion**

In educational, activist, and academic spaces, we need opportunities to investigate with students how they think about, feel about, and relate to digital technologies. In figuring out how to facilitate young people's personal explorations into the dimensions articulated above, scholars, educators, and students can consider how they might balance embracing the parts of online or digital experiences that they value with disrupting or complicating the elements that they find problematic. In cases where they feel unable to achieve such a balance, they can explore how they might advocate for systemic changes that would allow them to strive structurally towards better digital worlds. The positive repercussions of a critical approach to the online world promises to spill into other parts of young people's lives. As Morozov (2013) insisted, people who are encouraged "to think critically about the hidden costs of the invisible [digital] infrastructure that surrounds them are likely to approach many other aspects of life with the same critical mindset" (p. 321). For my research, working towards cultivating CDL practices with students based on the conceptual framework developed here was about much more than just the internet and digital technologies. It was about understanding and working towards students' well-being and education, towards social and ecological justice, and towards political and economic systems that work for more people more meaningfully.

As an increasing amount of young people's education, social life, and world move online – accelerated in light of the COVID-19 Pandemic – it becomes more important for students and educators to critically engage with the intersections of digital and social life. Developing CDL practices can help students actively and conscientiously participate in the reflexively organized and unfolding relations organizing social life. With a conceptual framework informed by institutional ethnography, educators can engage students with one another's experiences and other research about the ways their digital lives are coordinated extra-locally. Extending their

everyday expertise in these ways can support students' development of CDL practices for personal, civic, and ecological wellness and change. After the pandemic, as we reestablish educational, social, and logistical norms, we are likely to retain certain aspects of the digital uptake that surged over the past few years. The future of education and society will depend on people's potential to understand and intentionally involve themselves in the social relations that are orienting us towards particular digital experiences and away from others. Within this ongoing net of relations, the refresh button is constantly being pressed, and we can do much more than just wait for things to reload.

## Chapter 4: Methodological Approach

“Even in the face of powerful structures of domination, it remains possible for each of us...to define and determine alternative standards.”

-bell hooks, 1989, p. 81

In her book of the same title, bell hooks (1989) defined *talking back* as "speaking as an equal to an authority figure. It meant daring to disagree and sometimes it just meant having an opinion” (p. 5). The CDL practices around which my research is based involve uncovering and activating one’s authority within the social relations coordinating our everyday experiences of the internet. As explored in Chapter 2, approaching digital literacies critically means disrupting the presumption that digital technologies are neutral and tracing the relations through which we become entangled with them. Considering what *talking back* might mean in the context of CDL education, I am reminded of Langdon Winner who wrote that “[i]t is characteristic of societies based on large, complex technological systems...that moral reasons other than those of practical necessity appear increasingly obsolete, ‘idealistic,’ and irrelevant” (2020, p. 36). In the rapid change towards digital infrastructures – especially amidst the pandemic – just having an opinion about the social or political significance of digital tools can amount to talking back. This reflects a long history beginning with the industrial age whereby criticism of technologies has been taken as an affront unlike, for example, literary criticism (Winner, 2020, p. xiii). Inspired by hooks (1989), this chapter considers the research potential of *talking back* in relation to CDL practices. By laying out my methodological framework, I will examine how it might be possible to talk back through an IE approach to working with high school students that incorporates arts-based methodologies, specifically digital participatory visual methodologies (Gubrium & Harper, 2016) using cellphone films. Involving digital tools as part of students’ inquiries into their CDL

practices aimed to open potential for these students to uncover and become more consciously attentive to their participation in the social relations that coordinate their experiences of these technologies.

As defined in Chapter 2, CDL practices involve considering marginalized perspectives, asserting control within the social relations organizing our online lives, and trying to act ethically in relation to wellness and justice – for ourselves and others. Leander and Burriss (2020) have called on researchers and educators to inquire towards developing CDL practices where student "agents can leverage computational machines and processes to become more ethical assemblages with them" (p. 13). The research I did with high school students took Leander and Burriss up on this invitation. Considering a framework for developing CDL practices that builds from Dorothy Smith's ideas in relation to IE (1987, 1990, 2005), this chapter's exploration of digital participatory visual methodologies (DPVM) – as a dynamic and interactive methodological approach – aims to highlight the value and relevancy of this methodological coupling. Taken together, IE and DPVM have the potential to meaningfully orient students' inquiries into their roles as consumers and producers of the digital texts and discourses that set and reinforce their attitudes about and relationships with and through digital technologies.

I chose to anchor my research in arts-based DPVM because of how these approaches can complement the digital literacy practices that many high school students are already engaged in – at school and at home. Student researchers used digital devices that are common in their everyday to research these technologies, document experiences or ideas as short cellphone films, and share insights and digital texts with classmates. This is similar to what Yanez et al. (2019) discuss as *production pedagogies:* educational approaches that "offer an interdisciplinary and multimodal pedagogical orientation where learning actors are supported to engage real-world

research challenges and design competences, using real-world tools" (p. 31). Using digital tools to inquire about students' experiences with these tools and making cellphone films to anchor this investigation brought various research participants and digital texts they created into dialogue with each other – participants with texts, participants with other participants, and various combinations of participants and texts. As an IE study, this provided a context and technology for research that extended students' knowledge beyond the local, but in direct relation to their everyday worlds, and in a digital format with which many of them were already comfortable.

Cellphones and digital tools are not only valuable for my methodological approach because of their growing relevance to students' literacy practices. This chapter sheds light on how these tools – engaged educationally within production pedagogies – also open new potential for a critical look into young people's ordinary engagements with digital life. Baker et al. (2009) suggested that "[m]obile devices make the mundane interesting, the everyday confronted...[the cellphone] magnifies and brings the everyday world back into focus" (p. 119). As an IE study anchored in young people's everyday knowledge and practice, a DPVM approach utilizing students' cellphones can generate interest in taken-for-granted or common social practices while making the research domain more accessible for a critical investigation.

**Digital, Participatory, and Arts-Based**

In this chapter, I review the digital, participatory, and arts-based dimensions of my methodological framework (in overlapping ways, distinguished here for the purpose of discussion) and explore the value that these dimensions open for inquiring with students together towards the development of more CDL practices. Garcia et al (2015) outlined how "connected learning and a culture of participation are shifting models of digital literacy integration for civic and critical purposes" (p. 155). In their discussion of critical digital literacies, they highlight how

"digital media does more than create complex, multimodal artifacts; it renegotiates relational and social power" (p. 155). Following a similar approach, my research aimed to help students develop CDL practices that support them to actively and critically involve themselves in the reflexively organized and unfolding nature of social life. In IE terms, this meant exploring students' digital lives and the digital texts they engage with using art and digital tools so they could become more active and conscientious parts of the textually mediated discourses coordinating the relations that rule their digital experiences.

***Digital Tools: As Form and Content***

Working with digital technologies to investigate digital technologies worked on both an explicit level and also formally, providing practical and applied opportunities for reflecting with digital tools. Discussing work by Shaffer (2007), James Gee (2015) highlighted the importance of learning that goes beyond just explicit instruction to include applied problem solving:

> Because learning is based on experience, students do not learn facts ("information") well if we just focus on facts themselves. They learn and retain facts best when they use these facts as tools to engage in actions and solve problems...Teaching that focuses on problem solving and that uses facts as tools to solve problems leads to both fact retention and problem solving. (p. 131)

Using cellphone films to explore the problematics of students' digital lives – as a DPVM and as a textual focus for inquiry – helped students learn more about the organization of their everyday experiences online while providing an opportunity to practice their digital literacy skills in a supportive, educational setting.

When I first sat down to conceptualize my research project, I thought that using digital technologies to investigate themselves was a novel move. However, as I read more about projects

related to critical digital literacies, I saw this ironic play coming up a lot (e.g., Dyer-Witheford & de Peuter, 2009; Nayar, 2010; Navarro-Remesal & Pérez Zapata, 2018; Romero et al., 2015). In an article about *The Story Project*, a Canadian initiative that provides opportunities for marginalized people to share their stories digitally, Camille Turner spoke about how "[c]ommunication technology is becoming seamlessly integrated into the fabric of our daily lives" (LaFontaine, 2006, p. 78). Because of its power and omnipresence, Turner said that she is "really interested in harnessing [the] power [of digital media] and at the same time, critiquing it" (LaFontaine, 2006, p. 78). Similarly, Joe Lambert from the "Center for Digital Storytelling" in California wrote that his centre believes people "can use media, ironically, to overcome the more troublesome residual effects of our consumer media culture" (Lambert, 2002, p. xix). Lambert (2002) described conventional electronic media as "a one-way discourse...we could not talk back" (p. xix). He attributed the popularity of the internet and digital tools to the potential they unlock for us to participate more actively in conversations that impact us. As the next section explores, when we can talk back, we can more easily question or modify texts, and challenge aspects of digital media that we may have previously felt compelled to quietly accept. We can also create new texts that reinforce new norms. Bringing in literature that analyzes how students participate in discourses with digital tools – or about them – can open more potential for learning and transformation in relation to these technologies.

***Participatory Potential: Digital Access to Interactivity***

Central to my methodological framework is the participatory potential of a digital approach. Lankshear et al. (1996) wrote that a "digital text is experienced overtly as *being available* for rewriting, reconfiguration, and, in general, as a resource for *making* meaning" (p. 175, italics in original). In the 25 years since Lankshear et al. (1996) wrote about digital texts,

users have become increasingly able to interact with texts online in ever more sophisticated ways. Jenkins et al. (2009) highlighted how ‘‘participatory culture is emerging as the culture absorbs and responds to the explosion of new media technologies that make it possible for average consumers to archive, annotate, appropriate, and recirculate media content in powerful new ways’’ (p. 8). More recently, Garcia et al. (2015) also concluded that “participatory culture emphasizes how digital media retunes social relationships, mentorship, and collaboration through technology” (p. 155). Similarly, this optimistic view of the potential for digital literacy practices to affect change was articulated by Penuel and O’Connor (2018) in relation to organizing and social movements. Reiterating Soep (2014), they “called for [the] development of youths’ critical framing skills in identifying, negotiating access, and critically examining information that might help their organizing efforts. [Soep] also suggested that youth should develop skills in multimodal, interactive storytelling” (Penuel & O’Connor, 2018, p. 67).

Despite all this potential, Leander and Burriss (2020) – as introduced in Chapter 2 – lamented that the interactive and personal possibilities promised by the internet have been subverted more and more lately as our online experiences have become “ever more mediated by tools and agents that are produced and maintained by corporations” (p. 7). In Louise Drulhe (2012)’s *Atlas critique d’Internet,* she contrasted our contemporary experiences online to “the early years of the Internet [when] its architecture was distributed [and] users published their own personal home pages and had a decentralized occupation of the space” (2012, n.p.). Drulhe (2012) uses the concept of *slopes* to describe the homogenization that happens to internet users nowadays because the mediation described by Leander and Burriss (2020) falls into the hands of a few, monopoly-like corporations. These new internet structures are designed to coordinate rather than benignly engage, and users’ freedoms to choose their own online adventures are

quietly funnelled along generic, algorithmic lines towards manipulative consumer ends. Jia Tolentino's 2019 essay on the "presentation of self in everyday internet" (p. 14) – discussed earlier – contended that "[s]elfhood buckles under the weight of this commercial importance" (p. 15). Engaging internet-based methods for their promise of interactivity is threatened by these big tech slopes (Drulhe, 2012) because they orient people toward corporate interests, making it more challenging to use the internet in order to talk back. Even in the face of growing corporate mediation, the methodological approach to developing CDL practices introduced in this chapter aims to uncover and activate the control or interactive potential that the internet and digital texts might still offer – directly for individual users and collectively or structurally through organizing and activism.

Looking at how students participate in meaning making online, Gee (2015) discussed how distinctive internet communities have literacy conventions that value or make meaning from "specific socially recognisable identities engaged in specific socially recognisable activities" (p. 171). Because particular online communities "privilege certain symbols systems and ways of knowing over others" (Gee, 2014, p. 13), the proficiency or efficacy with which users can fluently situate their online identity with and within the materials, cultural tools or technologies, and social practices of an online community – both in recognizing and being recognized by others – have "consequences for their social standing among peers" (Wohlwend, 2009, p. 59). However, beyond fitting in, students on the internet can contribute to shaping what it means to fit in; when chatting or playing online, each "writing event layer[s] additional meanings and identities onto prior shared meanings and identities sedimented through previous play negotiations and enactments" (Wohlwend, 2009, p. 76). As students inquire into their power online, they can uncover more and more ways in which they already have a share of control. At

the same time, their control is entangled with others – at times hidden or out of reach (Leander & Burriss, 2020; Zuboff, 2019a). My doctoral research aimed to help students trace, access, and activate their control as they developed their CDL practices further. Creating, sharing, and analyzing digital texts that explore students' digital concerns further entangle them in their digital worlds but in more intentional and conscientious ways. Through a supported IE inquiry with DPVM, students aimed to stitch together their collective knowledge and perspectives in order to empower themselves and one another within social relations that, in other ways, may seem to overpower them.

I am not a computer programmer or an engineer, and neither were the students with whom I undertook this research. Winner (2020) said that without technical training, academics or critics often feel ill-equipped to take a critical stance on their digital lives and engagements with new technologies. However, he used the example of automobiles to point out that one does not need to be a mechanic in order to "understand how automobiles affect the texture of modern life" (Winner, 2020, p. 9). For my study, I helped students uncover their potential to be more actively involved in understanding and impacting their digital lives, regardless of their technical proficiency in the mechanics of computers. Considering Gee (2015)'s discussion of the living and multi-directional nature of discourse alongside Smith's understanding of research participants' local expertise (1987, 2005), I was confident in students' potential to critically embrace their active role in the social relations mediating the digital world around them and in which they participate. Practicing IE reaffirmed their expertise, even as nontechnical thinkers, and their ability to involve themselves in the social relations surrounding digital tools. Fed with the extra-local and often opaque coordinations of big tech, government, educational institutions, even family, as well as the complex psychological reality of high school, this research aimed to

support students to reassert themselves into these relations in more conscientious ways. Utilizing digital technologies for this research provided students with a way to participate in the textual mediation of their discourse communities while investigating the process for their inquiry project.

### *Arts-Based, Visual Methodologies: A Haunting*

In 2011, Claudia Mitchell asked, "How can visual interventions be used to educate community groups and point to ways to empower and reform institutional practices? What new ethical issues come to the fore in these action-oriented studies?" (p. 12). For my research, I had students address these questions by investigating the relations coordinating their digital lives, with a focus on the critical dimensions of these relations. Although the students, their teacher, and I co-devised appropriate methods as the research process unfolded, I anchored our research with cellphone films – based on *cellphilm* (Dockney & Tomaselli, 2009), an arts-based DPVM that Mitchell helped develop (Mitchell & De Lange, 2013; Mitchell et al., 2016). As described in the 2016 volume that defined the methodology, cellphilm is a PVM used in research to support participants as they "identify challenges and explore potential solutions. The videos themselves are then used to promote community dialogue" (MacEntee et al., p. 7). On top of just creating videos, cellphilm research often involves follow-up activities to ensure that the cellphone videos engage participants in dialogue with one another and lead to action (Mitchell et al., 2016). Mitchell et al. (2016) discussed these activities in line with hooks (1989)'s idea of *talking back:*

> We positioned the follow-up cellphilm work as a set of speaking back activities, as we have termed them, encouraging teachers to reflect on and critique the messages of their cellphilms, considering, for example, the significance of audience and the appropriateness of various messages. (p. 20)

The follow-up activities that I did with students after they made their cellphone films looked similar to the model provided by Mitchell et al. (2016). Students shared their videos with classmates and gave some background to what they were thinking when they made it. After each video, other students were given a chance to respond. The resulting conversations deepened students' understandings of the original texts and the topics they explored. Such "[s]elf-reflexive film-making" (Mitchell et al., 2016, p. 21) provided students with meaningful access to understanding and affecting the reflexively organized and unfolding relations organizing their everyday experiences with digital tools.

Because of cellphone cameras' growing ubiquity and accessibility, they can play a "democratizing role" (Mitchell et al., 2016, p. 19) in participatory visual research. By "democratiz[ing] the research process" (MacEntee et al., 2016, p. 7), cellphone users can engage DPVM on their own "personalised" (Mitchell et al., 2016, p. 30) terms and not overpowered by researchers who traditionally controlled methodological tools and technologies. Comparing cellphilming to other cellphone films, MacEntee et al. (2016) focused on "the ways in which cellphilming is understood as a form of knowledge production" (p. 9). McLarnon (2018), another researcher who has utilized cellphilm in conjunction with IE, catalogued how participatory visual methodologies and other arts-based methodologies produce knowledge by "inspir[ing] collaborative inquiry (Deleuze & Guattari, 1987; Carter & Irwin, 2014; Mitchell, 2011; and [N.] Nichols et al., 2017)" (n.p.). He described this goal as also central to IE and brought in some related similarities between IE and PVM: how both start "in actual material sites" (McLarnon, 2018, n.p.) and both are "strongly committed and oriented to social change" (McLarnon, 2018, n.p.). Through these commitments, IE inquiries aim to "build what might be described as a map of the relations that extend beyond what the informants we have learned from can see" (D. E.

Smith & Griffith, 2022, p. 14) to support their navigation of their local experience (D. E. Smith, 2005). McLarnon (2018, n.p.) cited DeVault (2006, p. 294), asserting that adding a visual and arts-based dimension that is relevant to students reflects IE's goal of uncovering knowledge "to be 'usable' in the way that a map can be used to find one's way."

Beyond the usability of a visual, arts-based mapping of IE findings, I found that arts-based approaches have other qualities that might help motivate action and change. As Sullivan (2000) wrote, describing the place of arts-based research in the academy, "[a]esthetic vision engages a sensitivity to suggestion, to pattern, to that which is beneath the surface as well as to the surface itself" (p. 22). This description characterizes the potential art has to affect participants both in terms of how they think about digital texts, but also how they relate to the *surface* more formally – in this case, to their digital device. Writing more specifically about PVM, Mitchell (2011) also described the potential art has to affect participants within the social relations involved in visual textual production and display:

> If we think that change is always about someone else, or about some division of policy-making out there, we fail to recognize that all of us who engage in research, visual or otherwise, are already in positions to affect some change or some social action somewhere. We can do that most effectively when we attend to the details of both production and display. Let us, then, be haunted by images, and work with communities in ways that ensure that others are similarly haunted. (p. 216)

In describing our involvement in one another's textual mediation, Mitchell's analysis sounds a lot like an IE practitioner's. However, in describing how arts-based images can haunt us and others, I think she points to some unique affordances that come with an arts-based approach. As pioneering arts-based researchers Barone and Eisner (1997) asserted, arts-based approaches

allow researchers and their participants to share their findings as expressive and ambiguous realities that are more personal and empathy-promoting than traditional approaches. In Sullivan (2000)'s poetic terms, arts-based approaches to research can deepen students' "sensitivity to their contexts" (p. 226). Tracing how we fit into the relations that moderate our digital experiences is not just about learning what we need to change. It is also about figuring out how to help participants open themselves to change. This is where arts-based approaches can haunt and help.

**Conclusion: Engaging Digital Tools to Rethink Our Digital Engagements**

As hooks (1989) described, *talking back* is "no mere gesture of empty words" (p. 9) but "the expression of our movement from object to subject" (p. 9). This movement is essential to the project of IE (D. E. Smith, 2005), in which the "active and creative subject" (D. E. Smith, 1990) uncovers and engages their role in co-coordinating the social relations organizing their life and the experiences of others. Navarro-Remesal and Pérez Zapata (2018) insisted that this work is urgent on a personal and local level, but its ethical repercussions are collective and go beyond our everyday worlds: "we need to locate ourselves as agents and consumers, within the intersection of technological production and exploitation, a postcolonial cyberculture, and the ethical challenges they entail" (p. 3). However, the collective, structural challenges that may be uncovered while inquiring around the everyday internet as a research problematic all start with and come back to humans: consumers, community members, activists, as well as politicians, business executives, and engineers. We cannot transform the internet on our own, but if we ignore our part, the internet does not change.

As the digital trends that dominated the COVID-19 Pandemic lockdowns get incorporated – or not – into our communities and institutions, it is an especially important moment to be developing CDL practices. These practices can help students both navigate their

use of digital technologies and involve themselves in discussions about how these technologies should (or should not) become part of everyday practices in school or at home. Fortunately, as Smith (2005) pointed out, coming out of a global pandemic is also a particularly fertile moment for this kind of work: “knowing the implications for practice of changing the concepts and categories that operate in coordinating institutional processes can be very useful at the point where changes have not yet been settled and where there is room for maneuver” (p. 32).

The methodological commitments introduced in this chapter served as a foundation from which I co-developed more specific research methods – as detailed in the following chapter. Oriented around IE and DPVM, and anchored in cellphone videos, these methods aimed to motivate students as active participants in a collaborative inquiry by which they might gain a deeper understanding of how they are similarly and variably knitted into social relations that organize their digital experiences, both as “passive products of socialization” (D. E. Smith, 1990, p. 161) and simultaneously “active, [as] they create themselves” (D. E. Smith, 1990, p. 161). Embracing the unique affordances of digital, arts-based methods, these inquiries investigated with and about digital tools in the hopes of transforming students’ relationship with their devices, the internet, and other people through or in connection with these technologies. In the following chapter, I will describe how I designed my research so that students had opportunities to become more critical consumers and producers of digital texts as they explored the textual and technological mediation of the social relations organizing these digital entanglements.

## Chapter 5: Study Overview – Research Questions and Methods

“you enter without knowing / what it is you enter

so it is with us

no one knows what may happen / though the books tell everything”

-Adrienne Rich, 1970, part 4

Reflecting Smith and Griffith (2022)’s formulation of IE research, the way I devised my doctoral study – the institutional ethnographic field work that I carried out with students and educators in a high school setting – came out of my own experiences and developed from the experiences of participants. The overview in this chapter demonstrates how my research approach aimed to honour my interests and concerns that prompted this work, while committing to an open and dynamic relationship with participants in shaping the directions that they took their inquiries. To capture this balanced approach, I will first describe my research design in general terms, then add specific details as this chapter – and the depiction of my time with participants – progresses.

I had already started my internetless year before the pandemic began and so – as described in Chapter 1 – I had the opportunity to reflect as a bit of an outsider on the changes I noticed happening between people and their digital practices as much of our everyday life moved online. I kept a journal reflecting daily on the sociopolitical and technological dimensions of the world around me, educationally and otherwise. Insulated from the doom-scrolling and many of the other overwhelming aspects of the internet in the early days of the pandemic, I had the time and clarity to develop a conceptual framing for my doctoral work (as outlined in Chapters 2 and 3) by investigating digital spaces amidst their social dimensions. As outlined, this involved exploring how the internet and new technologies relate to people’s – especially students’ – actual

embodied and interconnected literacy practices (to produce, engage, participate, support, resist, change, etc.). My offline reflections helped me prepare to go into the classroom and nurture spaces of reflection with students where they could think carefully about their everyday experiences of digital technologies.

With the methodological backing that I shared in Chapter 4, I designed my research plan – as described in this chapter – to learn with students about the digital texts and technologies in their lives and the relations that mediate them. By inviting participants along with me on this IE investigation, I hoped to support the development of students' CDL practices. As introduced, the way my methods unfolded developed significantly in dialogue with my participants. The conceptual and methodological ideas that I explored in the previous three chapters form the basis of the study that I describe below and that I analyze throughout the rest of my dissertation – the classroom research I undertook for my doctoral work. However, as I will lay out in this chapter, because I was committed to researching *with* people instead of *on* people, it took reflexive flexibility to translate the complexities of my conceptual and methodological framings into the work I was facilitating with participants. I will begin this chapter with the way I envisioned my research unfolding and then go into the actualities I faced in the classroom and the reflexive changes I made as a result.

**Research Context**

Digital literacies are now part of every subject area in Canadian high schools and developing digital literacy practices is an explicit focus in many different classes in diverse ways. On top of this, students are asked (both explicitly and implicitly) to do the ongoing work of engaging digital and online technologies outside of class in order to develop an effective and responsible approach to these engagements. As my research hoped to capture, this is a lot of

work! IE investigates work processes (D. E. Smith, 2005) – such as the work young people do to navigate digital spaces – and aims to make visible or trace the ways people's work is coordered via discourses and texts. For my purposes, texts include the digital devices and tools themselves as well as the content that circulate on or through these devices.

Because of my interest in the social studies of technology, I partnered with two Grade 8 Social Studies classes (55 students, aged 13 and 14) taught by a young teacher at a small, private, faith-based high school in a major city in Western Canada. For my attempt to engage in IE work with these students and their teacher, I devised a study – outlined in this chapter – that oriented participant inquiries around the digital, technological texts that coordinate their lives and world. The texts that we explored included students' smartphones, tablets, and laptops, the platforms, apps, and online services that they use on these devices, and the conventional texts that they engage with through these programs – including the cellphone videos that they created and shared as part of this research. All these texts were investigated in connection to the social relations which organize students' engagements with these texts, and which are organized by these texts. The research project I worked on with the students had the cyclical aim of inviting them to engage in CDL practices in order to develop their CDL practices in deeper and more active ways. In other words, I learned with and from students as they engaged in CDL practices that supported their critical inquiries into the digital infrastructures and tools that they were using. This approach was process- and content-based; it built with and from students' existing CDL practices to inquire about content – including discourses in which they participate about digital texts and tools – in ways that might support students' potential to engage digital tools more critically. By beginning where students already were, I aimed to facilitate a more

authentically participatory approach that could support students' CDL practices in relevant and personal ways.

My research operated on three fronts: classroom activities, student focus groups, and educator interviews. In class, I facilitated students' arts-based DPVM IE inquiries into critical issues related to their digital experiences. This included discussions and activities that invited participants to explicitly investigate online research, digital media, and cellphone videos while providing them with opportunities to practice and deepen their engagement with online research, digital media, and cellphone videos. As mentioned, I worked with the two Social Studies classes (55 students in total) over the course of 3 months, spending over 20 days at the school and facilitating their full class activities on 16 occasions. I also worked with four groups of students outside of class to discuss the activities and ideas that came up throughout the project. Each of these four focus groups had two to five students in them, and I met with each group two or three times over their lunch breaks for at least 40 minutes every time. In total, I met with 14 students as part of my focus groups. The 14 students who participated chose to be involved, self-identifying as particularly interested in digital technologies or online life. As with many IE studies, participants were *not* chosen for their generalizability but based on their interest and potential to contribute to a rich account of the work processes involved in their digital and educational lives (Sévigny, 2012; Welsh & Rajah, 2014). On top of student focus groups, I also held several 1-to-2-hour interviews with three educators at the school, two or three times each. **Table 2** (below) outlines the methods by which my participants and I collected data throughout the research project.

**Research Questions**

I approached my participant-centred inquiry with the following three research questions:

- (RQ1) How are the internet and digital technologies organizing or coordinating students' experiences in shared or related ways?
- (RQ2) How do students understand the interconnections between their use of the internet or digital devices and their well-being or the well-being of the planet (i.e., wellness, learning, and connection to issues of social or environmental justice)?
- (RQ3) How might pedagogical practices, and the structures that mediate them (i.e., curriculum, school policies, learning management systems, students' support networks, etc.) influence or change students' digital engagements and dispositions?

As RQ2 makes explicit, investigating these questions with an IE approach means uncovering insights from participants' standpoints – both the students and the educators with whom I was working. Laying out my ethnography here in this dissertation aims to address these questions from the standpoints of these participants but is directed towards researchers, educators, and interested readers who may be able to take what I learned into new settings to help other researchers, educators, and school systems develop educational efforts that support students' CDL practices. In other words, this ethnographic research project proceeded from the standpoints of my participants, but my findings are meant to be acted on by educators, researchers, and other folks who are exploring digital technologies with young people.

**Table 2**: *Data Collection Summary*

| | Who/When | Why |
|---|---|---|
| Field Notes | Observations of students, educators, and educational structures (i.e., educational technologies, management platforms, course offerings, curriculum, school policies on tech use, support staff, other supports, etc.) | To inform focuses for focus groups, interviews, and arts-based cellphone film inquiries (RQ 1) and to elicit further observations and reflections on students' experiences or educational structures (RQ 2+3) |
| Focus Groups | With 14 students split into 4 groups, | To elicit observations and reflections that |

| | | |
|---|---|---|
| | each meeting 2-3 times throughout the project | support students' potential to connect their digital experiences with their classmates' (RQ 1+2), and with pedagogical practices or educational structures (RQ3) |
| Interviews | With classroom teacher, school counsellor, and skills educator, 3 times each throughout the project | To elicit observations and reflections that uncover how pedagogical practices and educational structures relate to students' digital lives and critical engagements (RQ3) |
| Arts-Based DPVM (Cellphone Videos) | With all 55 students, working in small groups | The cellphone films that students created were not themselves a data source for my research, but they were designed to support students' inquiries; reflections on these videos (as discussed in focus groups or interview) supported the analysis of students' critical digital literacy practices and how they may relate to educational structures (RQ2+3) |

**Research Activities Overview**

In this section, I share a general overview of the research activities I facilitated, both in class and beyond it with focus groups and interviews. In the second half of the chapter, I describe how these activities actually unfolded with youth and educator participants, discussing the particular analyses I undertook with students in the findings chapters that follow. The differences between the design of my study and the ways it played out reflect my commitment to reflexive practice.

I started my work in the classroom as an observer for two hour-long periods, keeping detailed field notes during and after classes. For the following three or four classes that I attended, I played a more active role, inviting students to participate in discussions around the topics I had identified through my research as potentially relevant to developing their CDL practices. (I will describe what one of these full class conversations looked like in the second

half of this chapter.) During subsequent classes, I continued taking extensive field notes. Early discussions with students, captured in fieldnotes, helped me understand how students' digital experiences were connected to each other (RQ1) and I took what I learned to develop potential topics of critical concern (RQ2) to inquire more about during focus groups and interviews. As the discussions continued, I tried to steer participants' reflexive and iterative investigations towards addressing how educational structures might be related to students' concerns (RQ3). Along with the field notes that I gathered, these class discussions helped me figure out how to facilitate the culminating activity – students' cellphone film inquiries about digital technologies – in ways that were relevant to students' everyday experiences and concerns. Working with students and their teacher, we co-designed the guidelines for their cellphone film inquiries – as detailed further in Chapter 7. For the final four class periods, students were put into small groups and supported to plan, film, and edit their cellphone film creations. Towards the end of my time working with the two full Grade 8 classes, students were invited (though not required) to share the cellphone films that they created for their inquiry projects with their classmates and – if they wanted to – with other members of their community. Most students elected to share their films in class, along with reflections on the process. This prompted rich conversations, which I documented in field notes. As well, two of the groups submitted their films to an international cellphone film festival. I will examine the process and products of these arts-based inquiries further below.

Turning now to the focus groups that I facilitated with 14 of the students, these meetings began about 3 weeks into my time in the classroom. It was at that point that I began feeling familiar enough with the community to recruit students to support the project outside of class. I invited anyone who was interested in exploring their everyday digital/online practices further to join one of the focus groups. After solidifying four groups of student participants, I scheduled

meetings – using the internet to communicate with participants about when and where to meet. All of the student focus group conversations were semi-structured and lasted 40 minutes to 1 hour each – during students' lunch hours. My primary goal was to build supportive relationships with participants that might encourage them to reflect on their digital literacy practices in critical ways. Focus group conversations provided opportunities to develop and reflect on discussions about CDL practices that were happening in class, and to take these explorations further. All focus group conversations were audio-recorded and transcribed. They formed the bases of my analyses in the following two chapters. I will discuss the content and structure of these focus groups further in my findings. Drawing from the research I did about topics relevant to CDL education, the questions and discussion prompts that I used for focus groups followed students' interests and experiences – as they presented them in class activities – and connected these interests and experiences to issues of student well-being, learning, and social, environmental, or data justice. For the second and third focus groups held with each group of students, we explicitly discussed and reflected on the study's research questions, and students were encouraged to share more background information or personal experiences related to topics we had discussed in class. These focus groups also provided opportunities for students to reflect on previous focus group sessions. To support this reflexive approach, I brought anonymized excerpts from previous focus group transcripts to subsequent meetings and asked students to reflect on what they had shared and how their ideas might have changed. This informal data analysis helped ground the analyses that I developed in the following chapters.

The classroom teacher I collaborated with to facilitate this project (pseudonym, Chips[1]) was in attendance at all of the classroom sessions while I carried-out my research. He had input at all stages throughout the project and helped revise the discussion topics that I came to class

1 Student participants chose their own pseudonyms and I chose pseudonyms for the educators involved in the study.

with to ensure that students were supported and could engage in their inquiries meaningfully and safely. Over the course of 3 months, I worked closely with Chips and held semi-structured interviews with him at three points throughout the semester with a focus on CDL practices and how they could become more integrated into his teaching. As I will discuss further in the latter part of this chapter, I also decided to interview two other educators who were brought up by students and by Chips as relevant to the development of participants' CDL practices: the school counsellor (pseudonym, Gayle) and the teacher who coordinates the school's "skills support" program, often for disabled and neurodivergent students (pseudonym, Mack). I interviewed Gayle and Mack together once, and each separately on two occasions. The interviews I held with these two additional educators focused on their understandings of students' digital engagements and the pedagogical activities or institutional structures that they saw as relevant to my research questions, with a focus on RQ3. These interviews also provided opportunities for discussing how the school counsellor and skills support educator could help ensure the research project was facilitated in ways that were supportive of students' needs, and that lessons taken from the project might be sustained within the school community. In my conversations with Chips, Gayle, and Mack, we spent a lot of time specifically exploring CDL practices that they had supported students with, probing how these educators can become even better at facilitating students' CDL development. I audio-recorded these interviews and transcribed the educators' responses. Like with students, for the penultimate and final interviews, the educators and I looked at excerpts of anonymized transcripts from previous interviews and engaged in some informal data analysis, reflecting on what we had discussed and how our ideas had been validated or challenged.

**Analytic Methods**

Working with students and their educators in focus groups and interviews, we first identified patterns of common and divergent student experiences that related to their uses of digital tools and to their experiences of reading, writing, or sharing texts online. In order to come up with points of convergence or dissension, I synthesized ideas from classroom activities, focus group conversations, and educator interviews. As the project progressed, we engaged two main methods to support the analyses of participants' inquiries: voice-centred narrative analyses and arts-based cellphone films.

***Voice-Centred Narrative Analysis***

Throughout the focus groups and interactive interviews that I facilitated, I invited participants to reflect on the digital, textual processes that are important to their daily lives – in and out of school. Participants shared their understandings of and questions about the technologies that they use every day, the social relations that orient their use of and thinking about these technologies, and the texts that pass through these tools. As described above, I transcribed the recordings and then brought them with me – anonymized – to subsequent focus groups and interviews to facilitate participant reflexivity and co-analysis. We approached these collaborative analyses using a method based on relational models of voice-centred narrative analysis (Jankowska, 2014; Mauthner & Doucet, 1997). This approach involved multiple collaborative readings of transcripts where students and their educators were invited to focus on (1) the ideas that were expressed, (2) the way participants changed between pronouns ('I,' 'we,' 'you,' etc.), (3) relationships among participants, and between participants and their experiences with digital technology, and (4) participants' context within social relations. The students and educators that I worked with discussed the ideas that emerged for them from reading their previous transcripts in relation to these focuses. With my interventive support, these

conversations aimed to move past participants' observations about their individual digital lives to uncover ways in which their experiences with textual mediators (digital devices themselves and the content passed through them) moderated their experiences with these tools, and the ways that their digital experiences impacted others and the world.

Using a voice-centred narrative analysis aimed to uncover ways in which students' actual in-context experiences with digital tools are shared (or at least similarly coordinated) across multiple social contexts (RQ1). This approach helped organize data so that patterns were easier to spot without stripping the accounts of their contexts. By utilizing a voice-centred narrative analysis, I was able to focus in on participants' own conceptualizations of their experiences. From there, I identified patterns of experience across their accounts that reflected their engagements with digital texts. The ways they engage digital texts stitch their individual experiences into the social and institutional fabrics by which their digital lives are coordinated. This way of working analytically revealed how students understand the critical dimensions of the digital everyday texts that they encounter (RQ2), and it uncovered some of the social or institutional relations mediating students' educational experiences of online and technological texts along Drulhe (2012)'s *slopes* (RQ3). Similarly, by engaging the educators in voice-centred narrative analyses as part of our follow-up interviews, I aimed to develop a deeper understanding of the pedagogical practices and structures that relate to how they support – or struggle to support – students' digital literacy practices with technologies and texts (RQ3).

As Mauthner and Doucet (1997) explained, voice-centred approaches to data analysis are based on the ideas of feminist scholars, including pioneering IE practitioners DeVault (1990) and Smith (1987). Just as IE was designed as a sociological approach for people (D. E. Smith, 1987), the voice-centred approach to narrative analysis was developed to help people grapple with the

challenge of designing “qualitative data analysis processes and accounts...[that] keep respondents’ voices and perspectives alive, while at the same time recognizing the researcher’s role in shaping the research process and product” (Mauthner & Doucet, 1997, p. 119). In my own research, the voice-centred approach was also a helpful tool for engaging in co-analysis with participants. Students and educators were encouraged to think about their standpoints as an embodied disposition related to their social location, but not determined by it. By anchoring our collective data analysis in the standpoints of participants, a voice-centred approach aimed to encourage findings that were differentiated, and personally relevant for diverse students and educators (Mauthner & Doucet, 1997). With a voice-centred narrative analysis, participants’ ideas and words are protected in their context and they are given authority as experts in their everyday experiences. Instead of finding patterns across decontextualized chunks of code, or in large, impersonal data-sets, this approach looks critically at participants’ ideas and understands them in relation to their actual, local, material experiences. This grounding in reflexivity is another “theme which lies at the heart of feminist research” (Mauthner & Doucet, 1997, p. 121) and IE.

### *Arts-Based Cellphone Films*

Beyond narrative analysis, the arts-based cellphone films that students created during the research project were a further means of engaging in co-analysis (Booker & McCook, 2021; D’souza et al., 2021). The process aimed to help students analyze RQ2 as they reflected collaboratively and creatively about how their relationship to technology connects to their well-being and the well-being of the planet. Their cellphone film inquiries also aimed to help students analyze RQ3, exploring how the activity itself (and the pedagogical practices and institutional organization that mediate them) might support or obstruct students’ ability to develop CDL

practices. The cellphone films were used to elicit experience-based insights from students while also providing a relevant, and familiar digital form that students were able to engage to further analyze these insights – contextualizing them, connecting them with the ideas of others, as well as considering how to turn them into everyday actions and material change. Because of the inclusion of participatory methods in this research project, a focus on reflexivity was engaged to support students' inquiries by "acknowledging the critical role we [including students] play in creating, interpreting and theorizing research data" (Mauthner & Doucet, 1997, p. 121). Finally, for students who elected to share their film creations, these cellphone films were also a vehicle for public engagement or dissemination of learning. However, for my analysis, I was more interested in students' experiences creating and critiquing their films than the films' potential as products. Following Jenson et al., (2014), I believe there is more to be "learned by and about students in the process of media production, compared to what would be a relatively minor, arguably superficial, and certainly misleading kind of knowledge or information based on the style and content of their productions alone" (p. 225).

Both a voice-centred narrative analysis approach to data analysis and the inclusion of arts-based, DPVM cellphone film inquiries oriented students towards an active involvement in interpreting and shaping discourses around their understandings of and connections to digital texts and infrastructures. Such formal orientations in the analysis stage aimed to spill into the increasingly active and conscientious engagement students were working towards in developing more CDL practices.

**Students' Standpoints: Rethinking Methods Upon Entering the Classroom**

In the early weeks of working with research participants, it quickly became clear that they were at a different starting point than I had expected. Before I joined the class, I had asked

their teacher about the impact that the COVID-19 Pandemic might have had on his students' learning. He replied that he believed they had become "Grade 6 students in the bodies of Grade 8 students." With the pandemic both disrupting students' education and throwing them into more and more digital environments, the teacher shared that his students' understandings of digital technologies were not as sophisticated as they would need to be to keep up with the research activities I had planned. Even after having this discussion though, I didn't expect that I would need to explain so many of the terms I rely on to discuss CDL practices: "digital," "data," "agency," "automate," "algorithm," "echo chamber," "marginalized," "misinformation," and "supply chain," to name a few. In most cases, some students had a vague sense of what these words related to, but there were only one or two students in the grade who could explain any of these terms.

In order to make sure that the research activities would resonate with the actualities of the participants' everyday lives, I needed to reframe things and adjust my language. To do that appropriately though, I had to first learn more about the students' standpoints in relation to digital and online technologies. In IE work, "Standpoint is to be understood as a way of directing attention to the starting place of the inquiry" (D. E. Smith & Griffith, 2022, p. 77). According to Smith and Griffith (2022)'s recent encapsulation of IE, participants' standpoints are "the place from which the research can begin to look for how people's experience of their everyday world is to be opened up and explicated as it intersects with social relations that reach beyond the immediacy of their experience" (p. 77). Considering how much I wanted to share with students about CDL practices, I found it challenging to honour students' standpoints and resist a more traditional approach – starting from "a standpoint in a text-mediated discourse or organization... [and] proceed[ing] from a concept or theory expressing those relations" (D. E. Smith, 1992, p.

91). After transcribing and analyzing my focus group conversations with students, I became aware that, at times, I did fall into a more explanatory approach that introduced conceptual framings about which students were not previously aware. However, when I shared insights from my research about how students' uses of digital tools might relate to their well-being, learning, and issues of social, environmental, or data justice, I was also insistent on connecting these to what students were sharing and the local, material conditions in which they were developing CDL practices. In this way, I was able to ground any insights that I introduced firmly within students' active and actual engagement with digital technologies, inviting them to direct research activities in personally relevant ways, from their standpoints.

In this section, I will detail a few key adjustments I made to my research during the early stages of my time in the classroom. These include embracing an interventive approach to focus groups and interviews, inviting two more educators to get involved in my research project, and rejigging some of the class activities to include more specific – but still open-ended – questions to guide and prepare the students for their cellphone film inquiries. In communicating these changes, I will describe some of the classroom activities that I facilitated as part of my research to provide a fuller, ethnographic sense of my research context and what this research project looked like. To close this chapter, I will reiterate my approach to gathering and analyzing data, outlining how I have organized my findings in Chapters 6 and 7.

### *Interventive Focus Groups*

During the first couple weeks of focus groups with students, I did a lot of writing and reflecting on my role as a researcher and educator. As discussed, I found it challenging to figure out how to ensure students had the information they needed to meaningfully participate in conversations about relations ruling their digital experiences – especially considering the ways

they understood digital technologies from their standpoints and the limited exposure many of them had to foundational CDL concepts – without directing the conversations in ways that prioritized the discourses I was most familiar with over students' own understandings of their digital lives and experiences. While worrying about including too many of my own preoccupations – insofar as I had anticipated them to relate to students' CDL practices when I first compiled the reviews that informed my study – I was comforted thinking about the Smith and Griffith (2022) quotation that opened my dissertation, the description of IE explorers as "start[ing] off from our own particular position and interests – what we care about" (p. 76). Although I am committed to meeting students on their level and working from their standpoints, I also had a set of curiosities and interests I brought to the project. As such, I embraced an interventive approach that – as I will describe – provided students with more context to understand how their digital everyday might be coordered by some of the concerns that animate my interest in the topic. IE is committed to research relationships in which a researcher works from participants' standpoints "with minor interventions...relevant to creating an institutional ethnography" (D. E. Smith & Griffith, 2022, p. 27). The interventions I made reflect my interest as an IE researcher – in my case connecting students' CDL practices to the relations that coordinate concerns they may have around well-being, learning, and social or environmental justice – that "enters into and organizes what [participants] bring into focus, but always develops from their standpoint" (D. E. Smith & Griffith, 2022, p. 40).

Drawing from anti-racist research, I learned about interventive interviewing (Okolie, 2003) as a model for facilitating focus groups and interviews. This approach aims to support participants instead of just learning from them (Stahl et al., 2011). I actively tried to contextualize students' and educators' ideas during focus groups and interviews within the wider

discourses of educational sciences and digital literacy studies in order to support or challenge their ways of understanding the internet and digital tools towards developing more CDL practices. Okolie (2003) wrote that interventive interviews “not only gather factual information, but also help the racially minoritized to theoretically articulate their oppression” (p. 256). I was working with a group of students who were mostly white, but through an interventive approach to data collection, I was interested in working with them to uncover some of the ways in which the ruling relations of digital systems may be oppressive. In line with IE’s insistence that sociology be useful to participants, I wanted to help participants understand and challenge exploitative relations coordinating their digital experiences – developing more CDL practices that support their well-being and the well-being of others. Okolie (2003)’s approach to interviewing is similar to the way Stahl et al. (2011) think about focus groups as a means to empower and emancipate participants. Stahl et al. (2011) demonstrated how “critically oriented focus groups have the potential to improve communication and...contribute to challenging the prevailing orthodoxy” (p. 1) by which participants may feel disempowered. Similarly, I hoped to help research participants establish their own understandings of how CDL practices can improve their potential to navigate and manage ruling relations from their own standpoints – seeding the conditions for meaningful action and change. By using interventive interviewing and emancipatory focus groups within an over-arching IE framework, I sought to work with participants to explore discourses about the digital or online practices in which they participate. In interventive data gathering practices – like in IE – a researcher can support participants’ understanding of and power within social or ruling relations by directing conversations towards extra-local features or contextual factors that may not be apparent in their everyday. My role in this interventive dialogue was to provoke my participants towards deeper, more critical

discussions of their digital literacy practices so that they were able to act more responsibly and effectively when using digital technologies.

The conception of discourse that guided my study design and analysis follows Foucault's understanding of discourse "as systematically produced, ordered, and disseminated" (D. E. Smith & Griffith, 2022, p. 33). The systems by which the multiple discourses being investigated in this study – discourses that orient young people's digital engagements – are produced, ordered, and disseminated are textual: the texts young people engage with online or through digital tools and the technologies themselves as texts. As explored in Chapters 2 and 4, participants have both a growing amount of potential power to involve themselves in these discourses (Jenkins et al., 2009) while also being subject to more potential control from big tech corporations (Leander & Burriss, 2020). While exploring the ruling relations of digital life, I conceived of people as "active in participating in a discourse, and their participation reproduces and changes it" (D. E. Smith & Griffith, 2022, p. 34). This works as a cycle whereby "the reader engages with or activates the text... [and in so doing] the reader's consciousness is changed" (D. E. Smith & Griffith, 2022, p. 35). My research aimed to unpack this cycle with participants so that they could develop CDL practices that enable conscientious participation in, and transformation of, discourse. By using interventive interviewing in the focus groups, I sought to parallel this cycle on a smaller scale, harnessing the dialogue within each research activity as a discourse that allows participants to reproduce and change the ideas of others while transforming their own understandings of the digital practices and technologies we were investigating together. Engaging in interventive approaches to data gathering ensured that my research centred and supported participants from their standpoints while feeding in extra-local knowledge from other students, from previous interviews, from my own experience or research, and from relevant

digital media – texts that could help enrich students in the ways their everyday digital literacy practices connect to larger concerns for their lives, learning, and wider communities.

### *Adding New Research Participants*

The first few weeks in the school felt a bit meandering and it took some time before I knew who to talk to and what questions to ask. For the first several meetings I had with the full classes of students, I began with check-in questions that were designed to help participants build connections between their personal experiences and the ideas I was introducing in relation to CDL practices. I asked about what students would miss if they spent a year offline (and what they would not miss). We discussed how they believed digital technologies and associated literacy practices might change in the next decade, and they shared information about their favourite online influencers and why they appreciated their influence. These check-in questions and the conversations that they helped facilitate provided a context for students to share what they appreciate about digital technologies and their related concerns. They allowed me to get a better understanding of students' standpoints in relation to digital texts (i.e., what they care about, what they already know, what they have experienced, etc). By discussing the ideas that were brought up during these check-in questions as a group and listening to one another, students were able to begin making connections and find patterns in their experiences – as I will analyze in Chapters 6 and 7. Also, the classroom teacher used these opportunities to jump in and connect students' reflections to curricular objectives. For me, these check-in exercises were especially helpful for adjusting my research plans and rethinking how to facilitate students' inquiry projects in ways that reflected their standpoints and would support the development of their CDL practices.

Initially I had only planned to work with the two classes of Grade 8 students and their teacher but in my third week at the school, I expanded my project to include two other educators who had come up a lot during our check-in questions: the school counsellor and the educator responsible for coordinating the school's "skills support" program. From what I heard in the classroom, I quickly realized that these two educators played a role in many of the participants' engagements with CDL practices. Plus, when discussing troubling consequences of digital technologies, I realized the value of partnering with a trained mental health professional who could support students if the research materials or activities were too upsetting. Beyond my interviews with the classroom teacher, I interviewed the school counsellor and the "skills support" coordinator on three occasions – twice each one-on-one, and once as a pair. Our research relationships allowed me to support them to involve themselves more actively in the relations influencing their students' potential to develop and engage CDL practices at school.

***Revising the Research Activities***

After recognizing the disconnect between my research proposal and the students' understandings of their digital behaviours and engagements, I worked with their classroom teacher to adapt my plan so that I could learn about and from students' standpoints. Otherwise – the classroom teacher warned me – the students were not going to be able to meaningfully participate in the research activities I had planned. The changes I made involved simplifying some language and defining terms, but it also meant finding and adding applied opportunities to think about CDL practices by means of inviting students to engage with those very CDL practices. My field notes from the early weeks at the school recount my efforts to rethink my research proposal and plans. Looking back to my journal from one particularly overwhelming classroom session, I am reminded of a comment I overheard a student making about me after the

class: “Does he know we’re only in Grade 8?” she asked. I left the classroom that day feeling a bit defeated but also motivated to adjust my approach. When confronted with the reality in the classroom – as captured by this student’s comment – my idealized research proposal felt a bit tongue-in-cheek. When I went over my plan with the students’ classroom teacher, he cautioned me that I was being too open-ended and insisted that I just assign students specific CDL topics to focus on. As a participatory IE inquiry, I did not feel comfortable being so prescriptive. Luckily, the teacher was very open to meeting with me outside of class to go over my plans and collaborate on preparing activities that would scaffold students – from their standpoints – towards being able to develop relevant inquiries into the development of their CDL practices at school and beyond.

**Guiding Questions.**

In Smith’s earliest conceptions of IE, she wrote about the ways that exploring a problematic can direct research participants’ and students’ “attention to a possible set of questions that may not have been posed...but are ‘latent’ in the actualities of the experienced world” (1987, p. 91). Based on the categories that organized my CDL review in Chapter 3, I worked with the teacher of the Grade 8 class to imagine this latent space and flesh out specific questions that could be used preliminarily to uncover students’ standpoints in relation to digital literacy practices as a starting point for students’ critical inquiries into the problematics of their digital lives. These questions gave students direction without foreclosing their potential to direct their inquiry personally, based on their standpoints. The questions that we came up with (**Table 3**) were designed to help students extend their understanding of their technological entanglements extra-locally as they traced how various dimensions of their personal relationships to the internet or digital tools everyday were shared with other students, and how they were

presented in online discourse communities and in research. My approach was similar to ones taken by Gee (2014) and Stornaiuolo et al. (2017) who created tool kits for guiding inquiry with students on topics related to critical literacy development. However, the questions included in **Table 3** are less directly about the ability to critically discern or create texts – as it was for Gee (2014) and Stornaiuolo et al. (2017) – and more focused on the personal, social, political, ecological, and even economic dimensions of digital literacy practices.

For students who were already engaged in CDL practices, developing these further as part of the work I facilitated for my doctoral study aimed to be an opportunity for them to develop their critical approach to technology and share it with classmates. At least one question in each category provided an opportunity for reflecting on a CDL practice that participants were already doing or on a way that they already used digital tools that could support the development of CDL practices. Beyond individual changes, students were invited to begin thinking about how they might involve themselves in impacting changes at a systemic level through pedagogical or research activities like those involved in this project and through community organizing efforts, on and offline. To promote student inquiries that were oriented towards making collective changes, at least one question in each category specifically focuses on taking action that might contribute to systemic reform.

**Table 3**: *Questions for Initiating Student Inquiries*

| Dimension of Problematic: | Question: |
|---|---|
| a. Students' Well-Being | How might your health (mental and/or physical) be impacted by digital technologies? These impacts could be positive, negative, or both.<br><br>Did you and your classmates notice any patterns in the ways you feel like your well-being may be impacted by digital technologies? |

| | |
|---|---|
| | Are there times when you use your phone or the internet in ways that you don't like or feel you don't have control over? Explain. |
| | How might you challenge or resist aspects of digital tools that are negatively impacting your well-being? |
| | What are some strategies you use to support or protect your health and wellness in relation to your experiences with digital technologies? |
| b. Students' Learning | How do you figure out what to trust when using the internet to look something up? |
| | What kind of echo-chambers are you a part of online? |
| | What are some things that the internet or digital tools help you with that you want to get better at doing without the digital support? |
| | How has your experience of the internet become automated and how does this relate to the ways you express yourself and make choices online? |
| | How can increased media literacy help support your involvement with community organizing – online or off? |
| | How have you used digital tools to learn about digital technologies and practices? |
| c. Social and Environmental Justice | Choose an aspect of digital technology production (i.e., mining, manufacturing), support (i.e., content moderation), or disposal (i.e., e-waste) and find a story about or description of someone involved in that job or process. |
| | Choose a material/resource commonly found in digital devices and research where it comes from and how it is extracted/produced. |
| | In what ways might online activities or digital technologies contribute to increased energy use? |
| | How can you create online spaces that challenge and resist prejudicial or discriminatory ideas, comments, and algorithms? |

| | |
|---|---|
| | How might marginalized groups experience digital tech differently than other users? |
| | How might digital spaces be used to support activism and community organizing efforts? |
| | How are you already involved with social or environmental justice causes and campaigns online or that relate to digital technologies? |
| d. Data and Algorithms | How might companies use your data to try to modify/influence your behaviours online? |
| | How is your news-feed different from others? |
| | Why might companies want to influence your literacy practices online? |
| | How might companies use your data in ways that could impact other people? (Especially people from marginalized groups.) |
| | How might data mining and digital surveillance threaten or challenge activists and community organizers? |
| | How are you already engaged in responsible digital practices in relation to the way your data is gathered and used? |

In my first 6 weeks in the classroom, there were several discussions that I helped facilitate based around the questions in **Table 3**. One of the most substantial activities we did to address the questions lasted for two full class periods and gave students a chance to reflect on many dimensions of their digital lives before deciding what they were going to research further for their cellphone film inquiries. In small groups, students circulated between four large, brightly coloured pieces of butcher paper on which I had listed the questions from **Table 3**, broken into their four categories. Students collaborated in four groups to discuss, look things up, and take notes on the large papers, building on or critiquing what other groups had come up with as they moved around the room. Although the aim of this activity was for students to decide where their personal standpoint might direct further research, the process of moving from group-to-group and sharing answers gave students a chance to learn from and about other students'

digital literacy practices. As points of contention and patterns of experience began to emerge, students carved out particular interests that they wanted to investigate further. I will lay out and explore students' chosen focus areas in Chapter 7.

Some of the questions that students explored for these early activities relied on students' personal experiences (i.e., "Are there times when you use your phone or the internet in ways that you don't like or feel you don't have control over?" Or "How do you figure out what to trust when using the internet to look something up?") while others involved using their devices to look things up (i.e., "Choose a material/resource commonly found in digital devices and research where it comes from and how it is extracted/manufactured." or "How might marginalized groups experience digital tech differently than other users?"). During the activity, students reflected on personal experiences and used online searches to help supplement their responses to the questions I presented. This was the first of several instances during my time in the classroom where students undertook applied research activities (using digital tools) that provided opportunities to learn about some of the CDL concerns that the research was designed to address. Investigating questions with these students allowed them to blend their personalized knowledge with extra-local information that they learned from one another or from people on the internet. By using their devices to look things up in the process of investigating these questions, I observed some of the ways in which the participants access information online. For students who did not have the background to talk explicitly about CDL practices, these applied digital inquiry opportunities provided a context for engaging in explicit investigations of digital tools in critical ways. Put differently, inviting students to participate in activities that utilized digital literacies provided the content for the kinds of inquiries that could help them develop more CDL practices.

Surprisingly, another kind of applied learning opportunity emerged as students rotated around the room, reading and writing on the large pieces of paper containing the guiding questions. Without solicitation, students filled the papers with internet memes (i.e., Dr. Phil saying “Yasss Kweeeen”) and symbols that feature prominently in digital spaces (i.e., LGBTQ2SIA+ flags). I also noticed many inside jokes and absurdist doodles that named other students, perhaps trolling one another, further replicating common tropes of online discourse spaces. After 2 years of increased virtual interaction during the COVID-19 Pandemic, it seemed normal that the way students communicate online had begun to dominate their offline literacy practices as well. There was even at least one incident of anonymous bullying during the activity, where a female student was targeted by someone writing that she “loves pen15.” I did not find out who wrote this, but I discussed it with the classroom teacher, and we considered how it might reflect a toxic dynamic of online communities – the normalization of casual sexual harassment, especially targeting women and girls. None of the students admitted to writing the inappropriate statement but many of them agreed that the responses on the paper reflected the participation of students in online discourses. Working with the classroom teacher, we took advantage of the opportunity to facilitate a discussion about bullying and being respectful when using digital tools and in offline activities like this one. This led to a longer conversation that developed over the course of the research project about the ethics of making and sharing content online, and the politics and nuances of online discourses on social media. I have attempted to capture the most salient aspects of these discussions in the following chapters – especially insofar as they were discussed further during focus groups and interviews.

**Conclusion**

After getting to know the Grade 8 students and their teacher, I felt more in tune with students' standpoints and comfortable with the potential for my emergent research plans to earnestly engage with students on their terms. Students also became more open and connected to me as I consistently adjusted my approach and provided opportunities for them to connect their standpoints to inquiry topics that I believed could address my research questions and support the development of their CDL practices. By the project's halfway point, the classroom teacher informed me that he was surprised at how talkative and engaged some of the students were – even students who rarely contributed during their regular class activities. Many students who the teacher explained often see themselves as "too cool for school," as well as many who he told me struggle socially or with anxiety became avid participants in the class discussions about developing CDL practices. In reference to various students, the teacher was frequently telling me that "[t]his is the most I've heard [so-and-so] talk all term." By refocusing my research and connecting it more authentically to students' standpoints – their interests, concerns, and prior knowledge – students were eager to engage.

This participatory approach to classroom research looks and feels a lot like a student-centred approach to pedagogy. When I first started this research project, I had a hard time reconciling what I thought of as sociological research with what I believe to be student-centred education. Because I was initially so concerned with conventional approaches to data collection, I had trouble being present with the students and honouring their standpoints. When I realized that I was out-of-sync with students and started adjusting my approach, the students were more motivated and engaged, but I became worried that I would not have enough data from which to draw conclusions. After going back to the literature on IE, I reflected that I was not supposed to be the only one drawing conclusions in this participatory IE approach; it was just as important –

if not more important – to support my participants so that they could uncover conclusions that had significance for them. I had not realized how much the academic spaces I inhabit remain beholden to traditional notions of positivist, sociological research until I recognized how challenging it was for me to honestly embrace Smith's foundational commitments in developing IE.

The following two chapters describe my attempts to engage participants in focus group and interview reflections that connect their actual, lived experiences online or with digital tools to the social relations that coorder these experiences. I have laid out accounts of my fieldwork to analyze some of the ways in which the internet and digital tools relate to the experiences of the students with whom I was working. Especially after the disjuncture I experienced between my research plan and the actualities in the classroom, I was committed to avoiding "generaliz[ing] in a standardizing mode" (D. E. Smith & Griffith, 2022, p. 28) common to other sociologies. To honour participants' standpoints throughout the research process (instead of relying again on the abstract standpoints that I imagined when designing my research) I have followed Smith and Griffith (2022) by not coding the transcripts of my focus groups or interviews in the ways common to Grounded Theory (Walker & Myrick, 2006). Instead, I provided participants with opportunities to go over excerpts from previous conversations, identifying important points and sharing their reflections on my early analyses. Then – in a way that reflected conventional coding without abstracting data from its context – I went through the transcripts again on my own, identifying topics that could address my research questions and help trace the textual exchanges mediating the social relations coordinating students' digital experiences.

As introduced in Chapter 2, IE "avoids dissociating texts from actual sequences of action" (D. E. Smith & Griffith, 2022, p. 51) and always returns to the material reality of

participants' lives. This not only ensures that findings are "always from the respondent's standpoint" (D. E. Smith & Griffith, 2022, p. 67) but it helps uncover insights about the textually mediation of digital life that are pertinent to the lived experiences of real people and to the material relations that make these texts meaningful "as part of people's work – as they are being made or activated" (D. E. Smith & Griffith, 2022, p. 50). Avoiding generalizing from participants' lives is not to suggest that the ideas from this research project cannot help other students, educators, and researchers understand the social relations coordinating young people's CDL practices. Rather, grounding insights in the concrete actualities of my participants' online or digital realities directs readers' attentions to what hooks (1989) and D. E. Smith (1990) might call *becoming subjects* – how particular material conditions of education and of students' digital lives can support students to involve themselves more meaningfully in the relations that organize their technological experiences. Developing a more active engagement in the textual mediation of participants' everyday lives is an essential part of IE investigations and of CDL practices.

The next chapter, Chapter 6, will focus on exploring students' relationships with and through digital tools – thinking about the role they have in co-coordinating their device use and the role they share with peers, family, educators, and their devices themselves (or the people and corporations designing, selling, and operating those devices). In Chapter 7, I will look more specifically at students' engagements with the content that is communicated through digital tools, considering how students participate in the textual relations that impact their everyday practices and their identity or how they express themselves. These next two chapters investigate *texts* – focusing respectively on digital tools and the content that passes through them – and how they coordinate the experiences of the students (and educators) with whom I was working.

## Chapter 6: Findings – Digital Tech as Texts

"...the weaving of relational circuits between bodies, environments, and tools..."

-Aimi Hamraie and Kelly Fritsch, 2019, p. 10

In this chapter, I will share excerpts and analyses from the interviews and focus groups I facilitated with students and educators. I will bring these together to uncover formal aspects of students' relationships with and through digital tools. As I am interpreting them, CDL practices depend on students developing more sophisticated understandings of how they engage and negotiate their relationships with all the other people who play a role in their textual experiences with digital technologies – both in educational environments and in students' everyday lives, outside of school. Working with each interviewee or focus group's insights without decontextualizing them, I aim to both (a) represent the local, idiosyncrasies of various participants' relationships that impact their CDL practices, and (b) connect different participants' accounts together in order to highlight some of the shared orientations that they may experience when considering how other people are involved in the coordination of their digital experiences. As IE practitioners contend, collective inquiries have the potential to "bring ruling relations into view as people's actual practices" (D. E. Smith & Griffith, 2022, p. 28). Seen then as lived, material actions, the individual or collective roles that participants play (or can play) within the web of other people and relations ruling their digital environments is made concrete and more plausible.

For organizational clarity here, I have delineated three categories of people who participants uncovered as playing a role in the coordination of students' digital literacy practices alongside students: (1) parents, (2) educators or school, and (3) the digital devices themselves – or the content creators, programmers, executives, and other users who young people relate to

through digital technologies. These categories aim to help me share analyses about the formal dynamics of developing CDL practices in coordination with discreet groups of people. However, the way participants discussed various people's roles in their digital experiences was more blurred and overlapping. This is reflected in the organization of this chapter. For example, the second category includes how educational technologies – a mix of educators *and* digital devices – impact students' digital practices, whereas the third category focuses more on the role digital technologies play in organizing students' everyday lives beyond the classroom.

My questions in the early focus groups were especially concerned with how participants succeed or struggle to navigate and shape their online and digital experiences in the ways they want, or feel are important. Based on my research, I was excited to work with students to inquire into the ways their experiences with digital tools are challenged by or shared with the technologies themselves – or the people behind them. When we started to broach this topic with participants (i.e., how students and the social relations surrounding technology coorder their digital lives), some were indeed curious to investigate automation and other extra-local influences related directly to their devices. However, most students were more interested in talking about parents and teachers (i.e., closer-to-home extra-local influences). Because most students were not familiar with the term "agency," we used the word "control" to explore these influences instead. Although we delineated control in discreet ways (as reflected in the organization of this chapter around the roles of parents, educators, and devices), we had class discussions during our early sessions together that clarified the intertwined and co-constitutive nature of control (or of the relations students participate in that impact their digital control). I asked students what they thought "control" meant when used in relation to digital technologies like their cellphones or the internet. In both groups, several students used their devices to look up

"control" in online dictionaries and one of them found and shared the first definition on Merriam-Webster: "to exercise restraining or directing influence over." Another student noticed that Merriam-Webster features a "Kids Definition" of "control" which adds that the word can mean "to direct the action of." Students brainstormed several ways by which they direct the action of the digital technologies they use and ways that other people may be involved in their potential to exercise restraint or direct influence over their devices.

Thinking with students about the various players with whom they described sharing control in their digital lives aimed to help them trace the potential power that students themselves have within a web of social relations – further developing students' CDL practices. As Chapter 7 will explore in more depth, students' digital practices throughout this research project – like viewing, creating, and/or sharing digital texts – provided them with opportunities to practice a more critical, and self-conscious involvement in the relations orienting their and their classmates' experiences online and with technologies. Most of the students began their involvement in the focus groups under the impression that they were in complete control of their digital experiences. However, as our conversations progressed, their shared insights helped them uncover and understand ways in which they coorder this control with parents, educators, and people behind the digital technologies that they use.

**Parents' Role**

Karen (pseudonym) was confident in her ability to control the ways she uses her phone. However, her parents track how much time she spends on her device, and she explained that "if my screen-time goes up a lot, then [my parents] try to mention it to me, and then try to help me understand how to control it rather than just taking [my phone] away from me." In my first conversation with her focus group, Karen spoke a lot about the ways her parents influence her

phone use while trying to allow her to practice self-control. The other students in her focus group (pseudonyms, Billy and Sam) had very different experiences with their own parents. Billy described her parents as “hands-off,” and not involved in monitoring or managing her digital experiences. Sam’s parents do monitor her screen-time, but if it goes up, they are more likely to take her phone away than talk to her about it. Karen shared that she feels free to embrace or resist her parents’ supportive role in moderating her digital practices. Sam and Billy were envious of the freedom Karen has over her phone use vis-à-vis the device, information, and choices that her parents provided her. They expressed admiration for the way Karen’s parents encourage responsible digital literacy practices, instead of limiting screen use by taking her phone away. They agreed that this was a better approach than that of their parents. After we had our conversation about her parents’ approach to supporting her digital literacy practices, I asked Karen if she felt confident in her ability to independently exercise self-control with respect to time on her phone. This time she was not as sure. “It depends,” she explained, “whenever I'm like lazy or I don't have anything after school or homework then like, not really. I’ll just go on my phone all day.” The appeal of Karen’s phone and her parents’ appeal to resist overusing the device both contribute to how she practices digital literacies.

In the first conversation I had with another focus group (pseudonyms, Mia, Air, Pine, Abbi, and Taylor), I asked a similar question about whether they believed they were good at independently controlling how they use their phones. They all immediately answered yes but when they shared more details about their phone use, it became clear to them that – like Karen – their phone use was impacted by external influences. For example, all five participants shared that they do not have their phones with them in their bedrooms at night, at least not on weeknights. This is not a choice but a rule, enforced by their parents. Regardless, two of the

students thought it was a necessary intervention. Abbi explained that without her parents taking her device away at night, she would "get caught up with like texting with people and like FaceTimes and stuff" and stay up too late. Through our conversations, we began to explore whether students felt that relying on external supports meant they were not effectively controlling their phone use (or controlling themselves with respect to their phone use) and how uncovering the myriad people who may be involved in mediating their participation in digital spheres could actually open up more potential for them to exercise control.

Mia was the most vocally opposed to her parents' role in regulating her phone use. She shared that her dad had set "a lot of time limits on things." Of the five students in this focus group, Mia was the only one with automated time limits on her device. If she goes over an hour and a half of screen-time, her dad's automated intervention "will turn every single thing on my phone off." After Mia shared her thoughts about the way her dad's time-limit app worked, Taylor suggested using a similar app but setting up time limits for herself. The other students in the focus group at first thought that Taylor's idea was weird, but she explained it and convinced them that it makes sense to set time limits so that she could avoid having to control her impulses in the moment when tempted to use her phone. By the end of this conversation, Taylor's peers started to question whether they would prefer relying on their parents' control through a time-limit app like the one Mia's dad used or whether they actually prefer Taylor's approach – relying on their own self-imposed proactive control, aided by a digital tool that limits how much they can use their devices and in what ways.

Another less explicit facet of parental involvement in students' digital lives came up in this focus group when discussing how students use social media. Mia – a vocal advocate for environmental causes among her friends – explained: "I don't post or anything like that because

my parents are really strict about that. Like they're, yeah, they're really strict." I first thought she meant that her parents had a rule and she was not allowed to post, but she clarified that their strictness is about protecting their reputation; she talked about how her "mom has an Instagram account so that people can easily access her," for professional reasons. Then Mia told a story about posting something provocative on her own social media when she was younger that resulted in a lot of online engagement and got back to her mom. Apparently, her mom had to "apologize and a bunch of stuff," as a result of Mia's online behaviour. Since then, Mia had become much more hesitant to post things. Although Mia's experience demonstrates how digital tools can offer young people opportunities to participate directly in discourses that shape relations relevant to their experiences, Mia's relations with her parents eclipsed this potential. Parental involvement – and then expectations within the parents' own social networks online – can delimit and/or influence their children's digital authority and how all of our digital behaviours are oriented by these interconnected webs. As the previous examples demonstrate, parental involvement can moderate students' CDL development in ways that students saw as supportive and obstructive. This conversation opened a space for participants to talk about the power their parents have over their use of screens – whether through explicit limits and rules or more understated expectations or models of behaviour.

In a third focus group – featuring Alexa and Seth (pseudonyms) – we were able to delve deeper into the ways parental involvement impacts students' development of CDL practices. Alexa spoke a lot about her parents, and when I asked questions about her digital practices, she almost always answered by telling me about her parents' perspectives and what they had told her. She stood out as another student who, like Karen, had a close and trusting relationship with her parents. After Alexa told us that she believed herself to be good at moderating her social media

use, I asked why she thinks some of her classmates were not as capable. “When they say ‘can’t’ moderate,” she replied, “I think ‘can’t’ is a very strong word; they *can*, they just might choose not to.” However, she backed down a bit and realized that some people might just not know how to control the ways they engage with digital technologies. She admitted that she “had to ask her parents how to do that.” I asked if she learned how to moderate her device use at school too, but she said no; “it’s kind of one of those topics that just floats.” At home though, Alexa and her parents talked with nuance about being critical in relation to digital tools. She told us about a conversation she had with her dad about the environmental issues that can accompany technological solutions to environmental issues – specifically they had been discussing electric cars. “Yes,” Alexa began, “we're polluting the air with the gasoline, but also how much resources and stuff and pollution is going into making the battery for the electric car?” When I asked whether she had considered how environmental issues might relate to the digital technologies that she uses every day, she responded, “Not until more recently I would say, actually like *really* recently, since we've been doing the class...” Despite not learning very much about these issues at school, I asked Alexa why she thought she had developed strong CDL practices. She replied that “it’s how you were brought up and what your parents think too.”

Not only can parents influence what students learn about technologies, they can also play a big role in coordinating what digital tools their kids use and how they use them. Alexa believed herself to be one of the last students in her grade to get a phone when she got hers a year earlier, at age 12. Her parents made her wait because “they didn’t really want me spending all my time on the screen.” Even Alexa’s technology-related values came from her parents. During two of our focus group discussions, she brought up how important it is in her family that things do not go to waste; she said that they are all committed to using their cellphones until they break. I

brought up some issues associated with e-waste and how many consumers seem to want the latest phone, ignoring their role in environmental destruction. “There’s a lot of people like that,” Alexa said, disparagingly. She was empathetic though and insisted that many people engage in uncritical digital literacy practices because they do not know better. This underscores the value of CDL education in school and beyond. As I will discuss further in Chapter 8, the experiences participants have had with this research project can provide a model for similar learning or professional development opportunities for students and educators around CDL education.

In my first interactive interview with the classroom teacher, Chips, I asked what he thought about parents’ roles in his students’ understanding of and engagement with digital tools. Chips speculated that for some students, their main influences come from “older brothers or sisters or parents” and for some it was “YouTube channels.” In one of my last conversations with Alexa and Seth, we uncovered an important difference in the ways that the two of them relate to digital technologies. Alexa’s experience had been that she learns about social justice issues from family or school first and then supplements her knowledge on social media. Seth saw things in reverse, with social media as their primary source for information about social justice, sometimes supplementing it with what they encounter at school or at home. Seth shared that they do not get along very well with their parent: “My mom and I aren’t very close, so things like [what I’m doing online], we wouldn’t talk about at all.” These conversations prompted me to inquire further into how relationships with parents may impact the ways students trust and learn from social media, and what kinds of expectations are placed on students’ families to supplement the literacy skills students need to succeed in their education.

Analyzing how students see their parents and home lives playing a part in the moderation and development of their CDL practices is not to suggest that CDL development is an irrelevant

concern for educators in schools. On the contrary, students' extracurricular lives orient the expectations and practices that happen in schools. And although schools cannot be the panacea for all literacy challenges (boyd, 2017; Bulger & Davison, 2018), neither can parents. Hébert et al. (2022) uncovered the role that parents' own digital literacy skills play in their children's academic experience: "For parents who lack digital skills, their ability to assist with homework, communicate with classroom teachers, and evaluate their child's progress can be severely impeded" (p. 36). With student populations who may or may not be digitally supported at home, educators are expected to play meaningful roles in the development of students' CDL practices. As I will explore further in the following section, schools can be a site of explicit instruction around CDL practices; given additional time and support, educators can provide opportunities – like this research project did – for students to meet together and discuss the problematics they encounter in relation to their digital experiences.

**Educators' and School's Role**

In our conversations around digital device use and control, students explained that there are classes in every subject area where they use laptops or cellphones. However, each teacher has their own rules about when and how students can use their devices. Through our focus groups, I learned that some teachers allow students to keep their phones out or laptops open even when they are not explicitly part of class activities. Karen and Billy agreed with Sam when she said that she prefers these "classes where like the teachers, like let you have your phone on." Sam clarified that the teachers who let students have their phones out in class are not just giving them carte-blanche to use their devices as they wish. Rather, when students get notifications, on their phone for example, they can "just check who it is and then turn it over. Being able to have that reduces [distractions, making it easier to] focus." Ironically, having access to their phones helps

these students avoid using them. Framed differently, engaging CDL practices in schools can reflect and support the ways that students aspire to use digital tools in their everyday lives. Despite many of the issues related to digital technologies, these tools are an intimate part of students' experiences. As my conversations with this focus group underlined – both in relation to parental control (i.e., Karen's parents supporting her to moderate her device use) and educator control (i.e., teachers allowing students to keep their phones out in class) – students saw more value in learning to use digital tools responsibly than avoiding the potentially problematic devices altogether.

***Searching the Web***

In our focus groups, I invited students to brainstorm what types of digital literacy practices might be critical for classwork. Participants in every group were quick to bring up the challenges of misinformation and effectively searching the web. When I asked students how they judged the veracity of a web search, the most common answer I heard was that they chose results based on popularity. Students knew to be skeptical of what they encountered online but also admitted to only reading articles or posts that had been shared widely or that had received a substantial amount of attention. In further discussions, students were quick to concede that this was not a very effective approach to fact-checking. However, most had not considered that the amount of "likes" or "shares" something receives online may be unrelated to its integrity. They claimed that, in their experiences of Grade 8 so far, they did not remember many educators who had discussed how to judge the value of what they find on Google – or even that there are ways to navigate the internet other than Google. Hugh (pseudonym), one of the students who participated in focus groups, exclaimed that "you don't get taught things [related to digital literacy practices]; you have to learn things on your own."

Upon further investigation, I learned that that there were already at least two classes offered at the school where I was conducting my research that do support Grade 8 students in digital literacy practices, including trying to teach them how to discern trustworthy search results: a 3-month-long elective on various topics related to digital literacy practices, and a year-long Social Studies class with Chips – the teacher I was partnering with for this research project. That Hugh's account differed from what I learned later made me wonder whether there was a disconnect between the digital literacy education already happening at the school and students' understandings of what kinds of digital literacy education might be relevant to their own digital practices and habits. When I asked Chips about Hugh's comment, he agreed that many of his students have not developed the CDL practices that they want or need. He insisted that the students I was working with "have not yet learned to fact check. They have not yet learned to see multiple perspectives and they have not yet learned to come to their own conclusions at all...that's exactly what I'm teaching them to do." Chips told me that besides judging internet search results on "just having a lot of popularity," he has noticed that students often trust the first piece of relevant information they see: "since it's the first time they've heard of it...they'll believe the first perspective." Chips said that breaking students out of this habit is "a slow, arduous, sometimes not successful process," but he believes it should be integrated into the curriculum more broadly and throughout other subjects besides just Social Studies. We discussed the textual mediation of teaching and how all curricular areas engage with texts, many of which are digital. Chips brought up English and Social Studies as the two core subjects that are most often tasked with teaching digital literacy to students. However, he insisted that many CDL practices are just as relevant to Science, Math, and many elective subjects. Because the students I was working with did not have very many educational experiences of developing what I describe as CDL

practices, the class activities I facilitated for my research project were often the first time that students had reflected intentionally and specifically about things like web searches. In class and especially with the students in focus groups, I found myself both discussing the role of education in supporting young people's CDL practices while also enacting an educational model of inquiry – based on the principles of IE – that aimed to develop students' CDL practices further.

***Supporting Disabled and Neurodivergent Students***

I recognize that my research often encouraged participants to focus on the problematic role that digital tools might play in their lives. However, I tried to ensure that there were also opportunities to uncover the benefits that new technologies might offer. I asked Mack – the educator in charge of supporting disabled and neurodivergent students – about the digital technologies that he has been using to support some of the designated students in his roster. The first example he came up with was the transcription software that can be used to provide a student with written transcripts of lectures and classroom activities. Mack is currently using this to support a student "whose disability is auditory processing and anxiety." I asked whether it has been helpful, and Mack conceded that only when the student uses it. Because this student also struggles with anxiety, Mack explained that "the hard part is feeling awkward in class putting the recording device on the table." He added that, even when the student uses the transcription software, "there's a little bit of overwhelm of too much information collected." To overcome that challenge, the student is working with "teachers to know like what's good to record and what's not good to record" and working with one of the student's parents who is "going through the transcript to clean it up." Mack stressed that although the digital tools are helpful, they do not work on their own; "there needs to be more support to it." he explained. In Mack's account, the people who are actively involved in this student's engagement with an educational technology –

teachers who coordinate when to set up the technology, parents who clarify the technology's output on the back end, and the students who make the student feel (un)comfortable using the technology in class – came into view as central and sometimes neglected parts of students' digital literacy practices. Rejecting the conventional image of a young person as self-sufficient on their tablet, Mack embraced the idea that students' digital experiences are enabled by the effortful coordination of work practices that connect people (inside and beyond the classroom), and that those people could and should be viewed as significant to the development of students' CDL practices. For important technological supports to be available to students who need them, we also discussed the meaningful ways that other students can shape a young person's engagement with an educational technology (e.g., by stigmatizing or normalizing the student's technology use ) alongside teachers, guidance counsellors, parents, educational technology consultants, tech workers, and others.

Gayle, one of the school's counsellors, agreed with this holistic approach. She was part of a group interview with Mack and me when we discussed all the different people involved in students' digital literacy practices. She suggested that students' organizational challenges at school may be because they have digital technologies without enough support and without taking the time to reflect on and inquire about the people and relations that moderate their experience of these tools. She pointed out that students have "never been taught how to organize" or how to effectively use the digital technologies that could support their academic organization. "We kind of assume that kids know how to be organized," she said, listing some of the digital tools that we expect them to know how to use. However, as she pointed out, "[t]here's no user manual. You know, these kids just like download the apps, they have their fun...there's little direction" from

parents or teachers. Gayle discussed her own son's experience using new, unfamiliar digital tools:

> When his class started using Google Classroom, he had no idea how to use it. He didn't —he just kept like looking at the stream for anything new, right? And didn't know like how to access the worksheet that was on the stream or, you know, the assignment or whatever, and, uh, yeah, [my husband] and I had to sit and like teach him how to navigate Google classroom and where everything was going to be.

Mack described his son's similar challenges figuring out educational technologies and though he did not disagree with the efficacy of Gayle's approach, he brought up the perspective that "the school should be teaching this." He told us about a conversation he had with his wife about all the expectations put upon parents in supporting their children's digital practices in relation to school. They believe this is "something that teachers need to be doing in class...it seems like a lot of people assume that this is the job of either the parents or skills support program." Reflecting concerns brought up in the Hébert et al. (2022) article introduced earlier, Mack asked what parents are supposed to do if they do not have the time, resources, or knowledge to support their kids in the ways that schools expect. Acknowledging that educators are often also limited by a lack of professional development and time, Mack underlined the value that more focused and active CDL education at school can have towards equitable educational outcomes for all students. The "success" of a child in school represents (or is the function of) the successful integration of parental, educational, and often other (e.g., social work, psychological, bureaucratic) work processes (Griffith & Smith, 2005). We can begin to see these processes here in Gayle and Mack's accounts.

***Keeping Track of Assignments***

The students that Mack works with directly often need help organizing their schedule and figuring out how to effectively keep track of their assignments and homework. Although most of these students are officially designated by a mental health professional with particular access needs, there are some students in his program who are from the general student population but were identified by teachers or parents as someone who would benefit from additional help in a smaller setting. I asked Mack about the digital supports that students use to stay organized and he explained that they are required by the school to engage on multiple platforms – a gradebook that just features their grades on assignments and exams (accessible to their parents as well), two portals (Google Classroom and Moodle) where teachers can communicate details about upcoming assignments and provide feedback on student submissions, and then shared documents that are used organizationally or to collaborate on assignments. Mack pointed out that it is difficult for many students "to filter through all the [platforms to find the relevant information], and then every teacher does it differently." He described the school's ongoing attempts to "streamline" these digital supports so that students, teachers, and parents do not have to use several different portals to stay organized and communicate with one another. This section analyzes the everyday experiences of participants as oriented by the extra-local decisions or policies of the school in connection to these various platforms.

The students in all four focus groups were eager to expand on how digital tools and practices have come to organize (or disorganize) their educational lives, quite literally. They repeatedly complained that with all the different digital portals that their school asks them to use, there was no official or consistent recommendation from teachers about how they were expected to keep track of homework and assignments. For the most part, teachers did not ask students to write down assignments. Instead of paper agendas – which had been discontinued at the school

some years earlier – most students just waited for the automated reminders that were emailed to them. Instead of students keeping track of things in a personal agenda or a calendar, they relied on teachers to put assignments on their Google Classroom calendar and then for Google Classroom's automated code to populate their own calendars and send them reminders. Within each focus group, students shared strategies that they use to help themselves and one another stay organized and remember the due dates for assignments. Most of their ideas involved using digital tools – either to remind one another about assignments (through social media or texting) or to check their email and see if Google Classroom had sent them any notifications. Through these conversations, I learned about how students' organizational practices shift in relation to the notifications, pushes, and other affordances associated with Google Classroom.

The issues I heard students discuss in relation to a lack of media literacy education at the school (like in relation to search results) seemed to spill into issues with a lack of support to effectively use educational technologies. Because of all the different portals and the teachers' varied use of them, many of the students I spoke to seemed confused. Several of them cited the inconsistency with which their teachers used different online portals as an excuse for not handing in work. Even some of the educators I spoke with empathized with students who failed to complete assignments for which they had not received automated reminders. One of them said, "If they're not getting a notification, they're not just going to be randomly checking their [digital portals]," the teacher began, "actively logging on to check several different portals is a lot of work." As I will explore further in a moment, despite students' reliance on automated reminders – or perhaps because of this reliance – the issue of missing assignments seemed as prevalent as ever.

Although many of the students spoke fondly of the automated reminders sent by Google Classroom, Alexa felt differently. Alexa and Seth were explaining how most of their assignments and homework can be found online: “Besides Math and Science,” Seth began, “everything’s online,” Alexa finished. Seth saw this as good for their organization, but Alexa said it had led to her falling behind. “I get so many notifications from Google Classroom and email,” she said, “some of them I kind of don’t look at so much...and then I forget about it.” I empathized with Alexa’s experience, telling her about how overwhelmed I feel when I get too many emails or notifications, and how that can make it harder to be focused and productive. In another focus group, Hugh, Louis, Jeremiah, and McBin (pseudonyms), all shared an ambivalence about these notifications; they appreciated the support, but they also all described them as stressful. Hugh told the group something he read online suggesting that “a high school kid in Grade 8 today is experiencing the same stress as a patient having surgery in 1943 without anaesthesia.” (I include this here as an illustration of how Hugh felt about Google Classroom notifications. However, during our actual focus group, the rest of the students did not believe Hugh’s comment was true, and we used it as an opportunity to talk about the importance of critically examining what we come across online.)

I told Mack and Gayle about the ways their students felt about the school’s digital organizational practices and they were not surprised. When I brought up the challenges faced by students as they tried to use digital supports on their devices but were bombarded by too many notifications, Gayle threw up her hands in exasperation: “It’s hard! They're dinging and pinging and pop up and all sorts of things are happening on that screen.” She explained that whether or not students want to use digital tools organizationally, “they all think that they *need* tech.” She told me a story from the previous day about “a student who does not have a computer of her own

and she's not doing well in school." Gayle was helping the student organize herself and asked her to write down a to-do list. They "had 5 minutes and she was like, I need to run down to the learning lab to [borrow] a computer" in order to write down her to-do list. Realizing they were in a rush, Gayle asked the student, "do you have a binder? Like, can you just write notes on paper or anything—?" The student replied, "Oh no no no, I need the computer." Gayle knows this student fairly well and believes that she did not actually need a computer. However, she explained that "the kids feel like they need to have a computer to use as their notebook. Second, the teachers expect them to have a computer...there's a perception that it's a requirement," especially since classes resumed after the COVID-19 Pandemic lockdowns. Because some digital, educational changes happened so quickly and in the context of a crisis, it is important that educators, administrators, and researchers reflect explicitly on the value, concerns, and future of these technologies in schools and in students' lives.

Mack agreed with Gayle's analysis of the student who uncritically assumed she needed to use her device to write a to-do list, but insisted that for some students, having a computer as their notebook really should be a requirement. He insisted that the extent to which technological supports are incorporated into a students' life has to be individualized. He discussed some students who were able to effectively use digital supports and "some kids [who] just need to close the computer." He suggested that some students are still better at organizing themselves with analogue tools, like agendas or just a notebook where they can write in the dates. However, this only "works for some [students]. And students who have written output issues or physical barriers to writing in a notebook, that obviously isn't helpful for them;" they need a computer. Mack's approach to supporting students is personalized and he sees different tools and technologies as important for helping diverse students stay organized in varied contexts.

Despite Mack's enthusiasm for the school to involve itself more in students' online and digital practices, he acknowledged that it is difficult to include CDL education within the disciplinary structure of a high school; "at what stage [would we teach it,] and instead of what?" he asked. During one of our final conversations, Mack concluded that "pedagogically people agree" with the need for more critical education around digital literacy practices; "even teachers agree, everyone agrees...but," he asked, "how do you make that happen?" As our research partnership developed, I invited Mack to think more about how his role in the school might be harnessed to initiate some of the changes that he believed could support the development of his students' CDL practices. I will share how this played out in Chapter 8.

***Assessment and Feedback***

Another collection of digital, organizational tools that came up in many conversations were the technologies that allow students (and sometimes parents) to receive feedback about schoolwork online – either directly from automated digital tools or from educators through these digital tools. For an example of the former, Chips told me that he has found that students are too trusting of the texts they generate with the support of spellcheck and popular automated grammar-checking programs like Grammarly. He said that students are very surprised when he corrects technical aspects of how they worded their responses for assignments: "they'll blame the computer," he explained, "as if, 'well, the computer told me to do it like that.'" Students do not blame their reliance on the tool, but they blame the tool itself; they look past the active role they play in relation to the computer. Chips said it felt like "they're believing the digital authority that they're more comfortable with: spellcheck and Grammarly," as opposed to trusting him, "a human in a position of authority who marks their stuff." In place of trusting their teacher, some students trust the device and look to it for authority on what is right or wrong in the context of

academic writing. This relationship provides less space for the qualitative feedback that Chips prefers – as I will discuss further below.

Mack also discussed spellcheck and grammar-support software as technologies that may be helpful for some but that can obstruct other students' learning potential. He told me about "one student [who] starts the word 'science' with a 'c'" and so spellcheck "has no idea" what word they are trying to spell. We lamented that it is not simply that the student does not have certain baseline literacy skills but that the literacy norms upon which the spellcheck technology was developed and refined requires that they participate like an *average* user to be effective. It does not work in the absence of this baseline because all the data that the spellcheck program was trained with was from the most typical users of the software. In place of structural changes that might broaden the potential of these kinds of technologies, Mack encourages his students who are struggling with spellcheck to approach foundational skill development with analogue reading and writing practice. He believes that – in contrast to technological supports like typing with spellcheck – pen and paper "forces [students] to think about—to slow down...to learn the small details that, [if they aren't learned], can turn into big issues." I appreciated Mack's strategy and how it can help students who are not served by certain digital tools. However, especially with technologies like spellcheck that are designed to support people struggling with literacy skills, it is important to ensure that they work for all students – not just the "average" ones.

Analyzing the various digital portals by which teachers communicate grades and other feedback to students after assignments or exams, many students realized that the sole platform that parents have access to – the gradebook software – only communicates grades as a decontextualized number. It does not have a space where teachers can input qualitative feedback. Although all of the educators I spoke with felt that comments were more important than grades,

the portal with the number grade was the one that they were required – by the school's administration – to keep up to date. On one of the days when I was in the school, Chips was in a bad mood because the whole staff had received an email from the administration about keeping these online gradebooks updated. He was pretty certain that the email was directed mostly at him. According to Chips, he is very good at providing formative qualitative feedback to students, but he has not been as on top of the summative quantitative aspects of gradebook maintenance. A couple other teachers were in the staff room, listening to our conversation. One of them, an older man who also used to be a parent at the school, jumped in to suggest that although he might agree with Chips philosophically, they had signed a contract saying they would keep the gradebook updated. "I don't disagree with the ideology but it's in the staff handbook," the man said, "Like I tell my students, don't forget to read the fine print." He laughed. Chips didn't. Instead, he got a bit defensive and responded that such an approach goes against the school's mission statement and the competency-based curriculum. They had a bit of a back-and-forth about it and although everyone agreed that ongoing feedback was more helpful, everyone also agreed that number grades were still what parents want and what students expect.

Learning about the gradebook software, the staff handbook contract, and the pointed email Chips received about staff's gradebook practices, I began to see the social organization of how the focus on marks was being sustained in a school setting where all the educators I had spoken with were committed to prioritizing qualitative feedback. I asked the students in the focus groups how they felt about the quantitative online gradebook as opposed to written comments. Even they claimed to prefer receiving qualitative feedback, but most of them admitted to checking the portal with their number grades more consistently than any of the other digital spaces where comments might be communicated. This gradebook portal is the outward facing

text that connects and coordinates teachers, students, parents, and even administrators – despite its misalignment with the aspirations of many of those partners. The technology's affordances and limitations orient how students and teachers measure progress and even how administrators monitor and discipline teacher practices. Chips, Mack, and Gayle talked about the exploration process that the school is currently going through to decide on a new learning management system to invest in for the following school year. By the end of our time together, all three of them expressed a commitment to advocating for the school to make a decision that accounts for the values that may be embedded in the various programs that the school is considering.

In several of the focus groups, students brought up the stressful dimension of the gradebook portal, explaining how much it affects them emotionally when their mark is low or if it drops unexpectedly – especially because, being online, it is so instantaneous and without context. Other students were quick to point out the benefits of this portal, like how much they appreciate having their grades available and up to date so that they know whether there are any late assignments that they need to complete. From there, we delved more deeply into their experiences with the online gradebook portal. Pine, whose classmates insisted was the most academically focused student in her group, was quick to admit to checking the online gradebook portal a bit more than she would like. "I have it open on my phone right now," she said, pulling out her phone. Some of the others agreed. "I wish I would check it a bit less," Mia added. She and Pine said that they refresh their gradebook portal regularly, much more often than they check the portals that their teachers use to communicate comments and qualitative feedback. Because the technology of an online gradebook allows for students to have 24/7 access to their grades, it makes it possible for them to develop unhealthy relationships in which they overuse their

devices. I will discuss this further in the section below on the role digital devices play in young people's lives.

When I discussed the gradebook with Mack, he empathized with students who have trouble managing their use of the platform. "That chemical reward," he explained, "that instant feedback, it's so hard to resist." Mack explained how technologies like the gradebook software "pushed us too fast...towards a rigid expectation" around assignments and assessments. Mack provided some details about ways that the gradebook software is limited and rigid, beyond just the lack of space for qualitative feedback. For example, he explained that although teachers can use it to excuse students from assignments, the gradebook software is set up in a way that makes it easier for teachers to just expect all students to complete all assignments – regardless of whether they are in class or away or if they are struggling to keep up with the class's pace. Again, like in the case of the spellcheck software, this gradebook software was built for and reproduces a certain baseline of student productivity, stigmatizing and excluding those who cannot keep up. Mack is advocating for a new gradebook software that can offer teachers more flexible ways to communicate with students and parents, thereby opening up new, more personalized possibilities for how assignments are framed and assessed. Mack suggested that if the digital tools were more flexible, teachers would not be overwhelmed by the idea of "manag[ing] students in the classroom doing different things at the same time." He acknowledged though that adopting a brand-new learning management system – though it may make space for more progressive teaching practices – may also make things more "convoluted" and more difficult to use, at least for a time.

The final kind of digital feedback and assessment tool that I discussed with Mack was email and how it is used by educators with students or parents. Mack pointed out that although

the school's official policy is that teachers have 24 hours to respond to student or parent emails, it often feels like they have to respond more quickly:

> some feel like they have to respond at night because...there is a pressure that you have to respond and there are others who respond, so, the student or the staff might say, 'well, the other teacher responded,' right? Or, you know, it's that kind of thing, like it's a culture. So [the admin] don't even have to say [that staff are expected to respond to email quickly; it's just known.

Our conversations traced some of the ways in which digital devices themselves – on top of the cultural expectations uncritically promoted among staff – are set up with push notifications that orient users to feel the need to respond right away to messages. "Some teachers," Mack pointed out, "their phones and computers notify them when they get that message," even at home. Mack explained that he tries to resist these expectations – from his phone and colleagues – by turning off notifications and rarely responding to emails in the evening. He expressed the concern that if he does reply to student or parent emails at night, "it opens the door of like expecting or demanding, like, I do have the option of asking for help the night before it's due or an extension." If Mack does respond to emails right away or at night, he will often include a note in his response saying "'you happened to catch me looking at my email. Don't expect me to always reply like this.' And I'll say it to parents and students alike." This is one of the ways that he is trying to involve himself in the social relations that coordinate the expectations to be constantly online and productive. He has also begun using his email's "send later function" so as not to set up any expectations that he will send emails in the moment or at night, even if he does happen to have the time to reply to an email right away or after work hours. During this interview with Mack, I could see some of the ways that he was seeking to exercise control over the

communicative relations he participates in at school: setting boundaries and expectations clearly that help him overcome the sloping technological pull towards being constantly available and always on call.

***Sickness and Working From Home***

While we were talking about the way that the gradebook technology influences students' relationships to their education and academic assessments, I used the opportunity to ask the participants whether they could think of any other ways that the introduction of digital tools has changed their educational experiences in school. Billy brought up how overwhelming it can be to get sick and miss school when the expectations are to stay involved digitally from home:

> Say you're sick for 2 days – day one, day two. That means you have 10 classes to check Moodle for. That takes forever! And then you have to go to Google Classroom. It's so hard to keep track of...You're supposed to kind of [log into Zoom when you're sick] but at the same time not all teachers do it and some teachers accept you, some teachers don't— it's just a whole mess.

The other students in the group added stories about how their own experiences of getting sick and recovering had changed as a result of the increased availability and versatility of digital tools like Zoom (a video teleconferencing software) and the other learning management technologies that they use. Karen shared her experience of joining class from home when she was sick: "I was missing a lot, like in math, if you miss, like one day, you're basically—like you missed an entire unit, so it was sort of, you felt obligated." After hearing from the students, I brought in my own experience of getting COVID-19 and how, when I first tested positive halfway through my research project with their class, I was encouraged to continue with my research using online alternatives like Zoom. I decided against this approach in order to give myself time to recover.

Because digital tools allow people to work from home, it can feel like there is an expectation to continue working, even though one is sick. Through our shared experiences, students developed a more critical approach to the drive towards connectivity or productivity and how this relates to wellness.

Darin Barney (2014) captured the impact online technologies have on our work habits and life pace in a quotation I shared with participants during our final focus group discussions:

> Every day we are surrounded by people who "choose" to work incessantly, not because mobile technologies mean that they can, but rather because the mere availability of these technologies suffices to make them accept that they must. The work cannot wait because mobile technology means it does not have to. (p. 21)

Barney's sentiment resonated will Billy, Karen, and Sam. They discussed the schooling discourses they hear from some of their teachers and classmates, agreeing that it sets fast-paced expectations around how they are to engage at school. Sam said that students are constantly being told that "rest is important but school's more important." Sam explained that a lot of teachers remind students to focus on their well-being and self-care, but she felt that there were other, louder messages coming from those same teachers that prioritized academic achievement. Billy even admitted to coming to school when sick because she did not want to fall behind. To stop the spread of illnesses like COVID-19, participating digitally was the school's recommended option, rather than coming to school when sick. However, the value of taking time to rest and recover when sick seems like even less of an option now that digital tools allow and encourage students to participate remotely.

I wanted to hear from some educators directly to understand and help them understand how they may contribute to the discourses that relate to students feeling the need to prioritize

academic productivity over wellness (not unlike the discourses mentioned earlier that relate to educators feeling the need to be always available to students and parents over email). Mack pointed out how these expectations have developed slowly and – from his standpoint – were not just a result of the more sophisticated technologies being used in today's classrooms:

> If you miss school, even if you're sick, there is still an expectation that you're doing the work. I don't think that's a new expectation that you have to do work if you miss, but now there's more structure to do it, so maybe there's less flexibility from teachers; like if you were sick, there was a possibility a teacher might excuse something, and maybe now there's less possibility.

Mack's sense of technology's role in supporting students to stay connected to school when sick is that it is helpful (in that students have access to missed content and assignment), but that it also subtly and continuously prioritizes productivity – potentially at the expense of individual well-being.

Mack explained that not every teacher at the school expects students to Zoom in when sick. As a staff, he said that they "haven't spent a lot of time discussing this" but that "some [teachers] are more adamant about it happening than the others." Students told me that Chips was the exception among their teachers; he was one of the only ones who did not even offer sick students the option to participate in his class over Zoom. As Chips told me, "I made it pretty clear to them that I *wasn't* going to be doing Zoom [for students who were away sick], because I thought it was a superficial replication of what gets done in the classroom." For students who were particularly eager to participate while sick, he did provide a project-based learning assignment that they could complete from home, independently. He told his students, however, that he was hopeful they would focus on resting and recovering. He explained to me how the

school's competency-based curriculum provides students with many opportunities to demonstrate learning so that they do not have to catch up and do everything that they missed while away from class. Still, some students were not dissuaded. Chips explained that when McBin was sick and away, he was "furious" at Chips for not providing him with the option of Zooming in. "He was so insulted that he just Whatsapped himself in on one of his classmate's phones," Chips told me. Although everyone at the school is participating in the discourses that shape the social relations organizing the expectations of how students might participate in class (or not) when sick, it will take more than a few exceptional educators to shift students' and other educators' understandings of students' productivity and wellness – especially as digital tools become increasingly normalized in schools. More intentional and collaborative discussions about technology's role in students' life pace and well-being can help staff and students balance the valuable affordances of digital tools for remote work with the challenges they introduce.

The conversations I had with participants about their experiences of technologies in relation to school uncovered just how central digital tools are in mediating their educational experiences. Findings from this research project, as explored in interactive interviews and focus groups with participants, highlight the need for more educational resources and attention devoted to supporting students to develop more critical understandings of and engagements with new technologies. This could involve developing more consistent expectations for communication between students and educators, clearer communication about what is expected from teachers and students who are sick, and more explicit curriculum focused on the development of CDL practices. Such instruction could include opportunities for students to engage digital literacy practices critically for class activities and/or critical conversations with them about how to stay organized and in control of their learning. Especially in light of the COVID-19 Pandemic and the

quick uptake of many digital technologies for educational purposes, educators need to critically reflect on the ways they have taken up digital tools in their classes and how they and their students are expected to engage them. A shared assumption among some students that technology (e.g., a computer or tablet) has become a requirement for learning and assessment should be interrogated, as should expectations about the importance of "real-time" assessment data, and increased productivity that have come with the affordances of digital tools. To support students' CDL practices, schools need to work with or at least navigate all the people who may be involved in supporting their experiences with digital tools. This includes students' families and educators but also people involved in the way digital devices themselves might influence students' experience of and with these technologies.

## Digital Technology's Role

In describing the role that educators play in coordinating students' digital experiences, much of the previous section dealt with how the digital technologies used in school can orient students and educators in particular ways in relation to their education. In this section, I will move away from educational technologies and analyze some of the conversations we had about the role digital texts or devices – and the people behind them – can have in coordinating students' experiences outside school.

### *Unintentional Device Use*

"'Downtime' sounds like a word that doesn't revolve around electronics."

-Hugh, student participant

One of the most common ways that students discussed the role digital devices themselves seem to have – i.e., the role that the people designing and deploying them have – in students' technological life was by exploring the everyday experiences students have of scrolling on their

phones, particularly in the evenings or when hanging out with friends. For example, Billy talked about a regular occurrence that happens to her before bed in which she tells herself that she is done with her phone, and then finds herself using it again: “I'm like usually like super tired. It's like, it's like a muscle memory thing. Like you don't even think about it.” Other students in Billy’s group shared stories about similar experiences in which they do not intend to use their devices but find themselves on them more than they would like. Sam and Karen were particularly interested in discussing notifications on their phones and how sophisticated these strategic temptations have become. They shared theories about how Apple uses AirPods to deliver unsolicited notifications, and how Snapchat tries to lure users back onto the app even when their phone’s ringer is turned off. They went on to discuss “streaks” on Snapchat (i.e., when two users message each other daily for several days in a row) as another strategy that the people behind the app use to compel customer retention. As the students were sharing their insights, I added some related examples to give more context about how technology companies might be shaping our behaviours and experiences when it comes to overusing our devices. During the conversations with this focus group, all three of the students were passionate in their disapproval of people who fall into the traps of strategies like Snapchat “streaks,” but as we discussed the ways in which these tactics can affect young people, they also expressed empathy.

When I talked to Hugh, Louis, Jeremiah, and McBin about how their experiences with digital tools might be coordered with the interests of the technology companies who create and benefit from the platforms they use, these students were also quick to identify a shared challenge of managing the amount of time they are on screens. Hugh was the most vocal about his struggles to limit how often he is on his phone and he was also the only student in the focus group who repeatedly got distracted by his phone during our focus group sessions. The

conversation started off playfully as they checked their screen-time monitors – an app on their phones that keeps track of and reports (i.e., textually mediates) how much time they spend doing various things on their devices. Students bragged about how "bad" their screen times were (i.e., how much time they spend on their devices). Paralleling many of the participants in the other focus groups I met with, students in this group defended their device use, explaining that most of their screen time was because they felt a "need to have white noise or just something playing in the background" while they were doing other things.

In another focus group, students similarly shared that they got caught up using their devices without the intention to spend so much time on them. Abbi discussed how the experience of using her phone makes it difficult for her to keep track of time: "I feel like it's just hard to know how long you're on it. Like if you're scrolling on TikTok, you don't see the time." Taylor agreed, "like you say, like I'm gonna have a 5 minute break and you just get caught up in your phone and then you end up having like 3 hours just on your phone." By asking students questions about how their technology use felt, the participants began sharing ways in which it might be problematic. Louis shared how he feels like "he needs to always be doing something" but that he finds it "overwhelming." McBin had a similar concern about multi-tasking, suggesting that he can "get distracted pretty easily, depending on what [he's] doing." Jeremiah described how – when he keeps his phone in his room overnight – he turns it on immediately when he wakes up, even though he tells himself he does not want to:

> I tried to stop doing that, but it's just kind of like muscle memory already. And then immediately when I turn [my phone] on, I remembered that I told myself that I wouldn't turn it on, but yeah, I feel like it's horrible to turn it on right after you wake up...my fingers are so used to going to Instagram.

The other students in Jeremiah's focus group told him not to blame himself. I echoed the sentiment but asked them who they thought was responsible – or who shared control with Jeremiah. Louis answered with a comment about big tech companies, which lead to a conversation about surveillance capitalism that I will discuss in the following section. These discussions highlighted the importance of helping young people think critically and ask questions about how their experiences of technology happen in such a way as to make them feel as though they do not have control over their behaviour.

While in some conversations students embraced the desire to push back against the control of big tech and involve themselves in changes to their digital experiences, there were some big tech companies that students really appreciated and defended. For example, in discussing Netflix's use of auto-play and the algorithms that suggest viewing choices, students were fairly appreciative. In several of the focus groups, students were keen to discuss the autoplay feature which Netflix uses to start the next episode of something as soon as the previous one finishes. Alexa was discussing a TV show she was watching with her mom and how often they binge several episodes in a row: "I think [autoplaying the next episode] does contribute to it. But at the same time, I'm like, we both really want to watch the show or we both like it – we both like to stay up late." In the focus group with Mia, Air, Pine, Abbi, and Taylor, some of the participants were quick to concede that Netflix tricks them into watching more episodes than they would otherwise, while others suggested that Netflix actually stops them from watching too many episodes in a row through another automated feature – pausing the content one is viewing every few hours to ask whether they are still watching. In some cases, participants seemed to value the way that the technologies associated with Netflix's streaming service compel them to use the product, and so they were less invested in uncovering ways to resist it.

In many of the focus groups, students explored how the design of technologies and applications – like Netflix – may be shaping their relationships to, and use of, digital devices – for better or for worse. With this focus, students were able to inquire into and identify some of the strategies that people designing technologies use to entice users to engage with their products and services. From there, students uncovered how such self and collective awarenesses might support the digital literacy practices that can help them use these technologies more critically. Students brainstormed tactics that could be used to reassert their control – like turning their phone off or leaving it out-of-reach. Throughout the conversation, we kept returning to strategies that the students used to manage their device use and competing strategies used by the devices or apps themselves to encourage their use. We also considered the potential impact of students involving themselves more actively into the discourses coordinating their digital experiences by participating in the online exchange of written and audiovisual texts. In the following chapter, I will analyze how students understand their discursive practices – both online and in class – and how they engage or struggle to engage their potential role in coordinating these relations through their participation in social media.

***Surveillance Capitalism***

Although we did not read Shoshana Zuboff's book about surveillance capitalism (2019a), online tracking and data capture came up with some of the focus groups during our sessions. These conversations brought together some of the ways that digital tools orient students both inside and outside of educational contexts. In two of the focus groups, students wanted to inquire more into the way Google collects and uses data on students due to its central role in providing educational services to them through Google Classroom. After Seth proposed that Google Classroom might be a good option for their school because it is free, Alexa rejected that logic:

“But it's never free. It's always taking something, whether it's data or your attention; you're the product.” She understood that there was more going on than just students accessing a free service. In the focus group with Louis, McBin, Jeremiah, and Hugh, we explored data capture and surveillance capitalism in more depth, discussing the approach to business in which companies gather and commodify internet users’ data for profit. All four of the participants were interested in thinking about how technologies themselves were influencing their digital experiences, speculating about how businesses and their executives might try to manipulate users’ online consumer practices. They were eager to discuss cookies that track their online activity, as they had learned about cookies recently in class. Every time one of them used the word, they all chuckled. Louis explained that it was because it reminded them of the cookies one eats. Despite their playful attitude, students in this focus group were aware of some issues related to online surveillance and questioned what data was being gathered on them in exchange for their free use of Google Classroom. At the end of our first focus group, we did some collective inquiry online and read about the advertising profiles that Google and other big tech platforms gather on users to personalize their digital experiences and incentivize behaviours that make money for the platform, often at the expense of users’ attention and pocketbooks. These activities blended research and education, uncovering how doing research activities in the classroom can support the knowledge generation for both researchers and students or educators.

During the second focus group I held with this group, I asked participants what they knew about the personalization of their search results when they use Google’s search engine – and how this might relate to the advertising profiles we had discussed during the previous session. At Hugh’s initiative, the four students in the group carried out an experiment to look at how their search results were different from one another, even if their search terms were

identical. They all searched for “where to find free food.” One student found results for a food bank. The others did not. Despite claiming to understand tracking/cookies, all four students were fascinated and surprised by how distinct their search results were. They suggested that most of the people in their class would assume that search results would be objective and consistent. When I asked why they were aware of something that most of their peers did not understand, Hugh insisted that it was because the others had not reflected on it explicitly in a group or done an experiment like this one. Hugh’s comment underlined the value of fostering students’ social analysis explicitly – bringing participants together to engage in critical inquiry based on their personal, everyday concerns. To develop educational structures that help students enhance their CDL practices, these kinds of inquiries need to happen for both educators and students. Working with Gayle, the school’s counsellor, I brought up the activity that Hugh’s group explored, and she admitted that she also would not have thought about the personalization of her search results without an explicit conversation about it, like the one we were having: “I haven't even actually thought about that,” she said, “but when you say it, I'm like, yeah, of course. You know, but it's not something that is—I don't know that I think about that when I Google search.” As our conversation continued, Gayle suggested that in light of our conversation, she “would give specific resources” to students – like those struggling with mental health crises, for example – and not just tell them to search on Google themselves and expect their search results to be meaningful. Perhaps because of the speed with which information ecosystems have shifted with the internet – especially as big tech companies develop sophisticated ways to manage users’ online experiences (Leander & Burriss, 2020) – it has become more important for CDL practices to be built into teacher training or professional development for educators so that it can be integrated more meaningfully into education for students.

After Hugh's experiment, and in later meetings, the conversations with him and the other three students in his focus group often returned to the value and issues with the personalization of search results online and the related data gathering practices – both in searches and in curating their social media feeds. Students valued many of the websites or platforms that participate in some level of tracking or data capture and – as discussed – were required to use some by their school. Louis pointed out that in certain situations, he can avoid having data captured beyond his control by "managing cookies" or just not using certain websites. However, he said that managing cookies or avoiding websites is not always possible, especially when "it's like something very important. Like Nike." Although I disagreed with his example, we all agreed with the idea he was expressing. Louis explained what he saw as some of the negative consequences of asserting control over how his data is gathered – like if he were to delete his cookies, he would have to refill all of his log-in information and passwords. He explained that, from his perspective, the value of being careful about cookies is often outweighed by the loss of convenience.

During our final focus group together, I shared Postman (1995)'s idea that "For every advantage a new technology offers, there is always a corresponding disadvantage" (p. 192). Students appreciated this way of looking at new technologies and started doing an informal cost-benefit analysis, weighing the benefit of being able to use helpful online platforms for free against the cost of having their data gathered and used by companies or third parties for advertising purposes or other targeted coordination. I added that, according to Postman (1995), the advantages and disadvantages of new technologies do not have to impact the same people; "every new technology benefits some and harms others" (p. 192). McBin made sense of this by

pointing out that tracking and personalization can be bad for them "wasting time" on their phones, but it is simultaneously good for the company that is making more money.

Students began to understand more critically how their experiences with digital technologies are knitted into a fabric of relations that coordinate consumer choices and everyday life online. To navigate the institutional confines of these ruling relations, I asked students to think about how they can manage the coordination facilitated by the surveillance capitalism that now dominates online spaces. (With two of the focus groups, we even started using the term surveillance capitalism in our conversations.) Hugh brought up ways in which shopping websites sort search results, featuring sponsored content, and how being aware of that can help students look past the "hyped-up" or superficially inflated results. We talked about what they called "lateral reading" – a technique they had learned at school – in which students do searches on multiple websites so that they have various sources help them determine the quality of search results. Students were also keen to share and sharpen their knowledge about private browsing, Virtual Private Networks, and alternatives to Google that could help them avoid tracking and experience the internet on their own terms. Through these conversations, this focus group helped develop a basis for thinking about digital and online technologies as texts that coordinate the social relations by which students' digital experiences are organized. With that understanding, students were better able to understand how big tech companies attempt to organize their digital life and how they can develop their CDL practices to help resist the exploitative aspects of personalized tracking- and data-based digital coordination.

***Big Tech Monopolies***

At the beginning of our focus groups, Louis was one of the students most confident in his capacity to remain in control of his online practices. However, as we discussed the ways in

which large corporations are trying to manage internet users, he changed his perspective and claimed that “control over the internet... [is] something that you’ll never totally have, I mean, you could have a better understanding of what's happening, but you never will [have complete awareness and control].” Most of the other students agreed, claiming that they could develop CDL practices to help them have better understandings and more control, but that big tech corporations have more power than ordinary users, and that they are only getting more powerful.

During one of our discussions about surveillance capitalism, I mentioned the “monopoly-like” control big tech companies have in mediating so much of our contemporary experiences online (Leander & Burriss, 2020). Louis asked what I meant by “monopoly-like,” which spawned a larger conversation about monopolies and anti-trust laws. Only one of the four students in this group, Jeremiah, had heard about this type of legislation but all four of them were interested in learning more about it and finding ways to advocate for change in their digital environments. Each student in this focus group had particular areas of knowledge that were not shared by all the others in the group, allowing for mutually beneficial conversations that helped develop participants’ understandings and CDL practices. Though Hugh had not heard of anti-trust laws, he did know about big tech companies using planned obsolescence to manipulate consumer choices in unfair ways. He shared this while we were discussing anti-trust laws, and the other students were quite surprised. However, as they started to discuss it further, they all realized that they had personal stories that related – about devices malfunctioning in unexpected ways. Discussing planned obsolescence together supported the students to understand how their everyday experiences as consumers of digital technologies were coordinated by the extra-local strategies of people working for big tech companies.

I asked whether students thought that the big tech companies of today (Google, Facebook, Apple, Amazon, and Microsoft) will be around when they are older. All four students believed that they would be and insisted that it would be very difficult for anyone to challenge the stranglehold of these powerful corporations. They all acknowledged the influence they could have as individual consumers if they organize collectively to use better or safer sites and apps, thereby pressuring companies to provide better or safer experiences for users. However, McBin and Jeremiah claimed that there were no better or safer alternatives to the big tech giants. Jeremiah brought up Google Search as an example, suggesting that there were no other search engines that were as effective. This led to a valuable discussion about why he thought Google was the best. The other students got involved and all four realized that they had not tried many other options. We had another discussion about Hugh's Google search experiment where they explored the personalization of search results. I told them a bit about how Google favours sponsored content and sorts its results based on what is most popular or clickable, and not necessarily what is most relevant or useful. We then built on our previous discussion about some alternative CDL practices that can retrieve the same information as Google searches.

By simply talking about what they do and experience online, students uncovered important insights into CDL education. Discussing their digital practices with one another – supplemented by what they were learning during the class activities and focus groups – helped students identify ways to reclaim some control over the relations mediating their digital experiences. Mixing these conversations with investigations into how people elsewhere (who create and manage devices and apps) were also involved in impacting students' experiences of digital life opened up other avenues for critical inquiry as students began to identify ways in which they were being manipulated, and articulate potential modes of resistance.

**Proactive and Reactive Strategies**

Capitalizing on the value of discussing surveillance capitalism and big tech monopolies together, students began sharing strategies they use to reassert their agency vis-à-vis their engagement with personal digital devices. We separated these CDL practices into two categories: proactive and reactive. The proactive strategies included using features of devices that can limit notifications (screen-time limits, 'do not disturb' mode, or parent controls), as well as more straightforward tactics like turning the device off, deleting an app, or leaving the device at home when going out, or in another room. Sam, for example, explained that "if [she's] in the middle of homework and [she] can't stop going on [her] phone, [she] just turns it off." Alternatively, reactive strategies for controlling their technologies related to trying to manage their device use in real time, attempting to use these tools in ways that allowed them to exercise more control over their digital lives.

Hugh said he preferred proactive strategies. He suggested that he has control over *how* he uses his phone but that he cannot control the impulse to use it. He brought up taking a moment to drink some water when he wakes up as a tactic he uses to stop himself from acting without thinking and immediately going on his phone. Jeremiah said that he is also trying to avoid going on his phone right when he wakes up, so he recently started leaving it outside his room. Similar to my discussion with the other focus group about Karen's parents' approach to supporting her device use, Jeremiah explained that his parents did not enforce this strategy, but they did share research with him about the issues of checking one's phone immediately after waking. They left it to him though to figure out how to regulate that. Like Karen's parents, Jeremiah's parents supported the development of his CDL practices with education and guidance but without mandating a particular course of action.

Taylor and Seth – in different focus groups – both shared how they used the proactive strategy of setting time limits to control how much they go on their phones. Like the time limits introduced in the section on the role parents play in regulating their kids' digital lives, Taylor and Seth set up their own time limits for their devices – similar to parental controls but without the same external authority – and this effectively helped them avoid using their devices as much as they had been. McBin shared a more drastic proactive strategy that helped him when he found himself struggling to control his technology use reactively: he deleted the application that was driving the overuse. When he used to have TikTok, he would check his phone every morning before school. "I used to have it," he explained, "and then I stopped because I was watching it too much. So, I deleted it and then I downloaded it again for some reason. And then I deleted it again." After he deleted the TikTok application, he started to feel like there was "no point" to checking his phone anymore. He found that "if I don't have anything to do, then I just don't open my phone." Through our conversations, all four students in McBin's group agreed that it was easier to self-regulate their device use proactively than it was to try to control an in-the-moment impulse to scroll through their social media accounts.

In some of the other focus groups, participants expressed sentiments that suggested they felt that reactive self-management in the moment was preferable to proactive self-control. Karen even suggested that working without supports or proactive guards was a more meaningful kind of self-management. She said, "I don't want to like, have to force myself to turn it off. Like I want to be able to like manage it." As our conversations continued, I tried to interrogate why students felt like it was better to manage things reactively on their own instead of relying on proactive tactics or external supports. Karen explained that she wanted to be independent and not rely on her parents to encourage her to control her screen-time. Sam also valued independence

and did not want to rely on any external supports. She explained her preference for reactive control:

> Not having my phone near me almost makes me a bit more like thinking about it, but just having it near me, knowing it's there kind of makes it easy...When it's in another room, I'm thinking about it more and it's kind of stressing me out, but if I have it with me, I know what's going on with it.

Having self-awareness of the ways in which one feels drawn to use a digital device can actually help a user avoid engaging technology in the ways they aim to avoid. In other words, uncovering the relations coordinating students' digital experiences provides more opportunities for students to involve themselves with and navigate those relations. Critical approaches to digital literacy practices can facilitate discussion about the relations, discourses, and values that orient students to technologies in particular ways. Like the conversations I had with focus groups about proactive and reactive approaches to managing their relationships to their phones, CDL education with different students must be responsive to their standpoints and will look different, even reaching different conclusions, with different students or groups.

**Conclusion**

In this chapter, I described the interviews and focus group conversations where I invited various participants' perspectives, supplemented by research and my own contributions. These discussions opened up new directions for students' social analyses, thereby supporting the critical development of their digital literacy practices and their increased potential for control over digital tools. Because students are so often required to participate in their community digitally, developing critical engagements with the internet and technological tools is imperative to students' success in navigating their world – in and out of school. In order to address the ways

that educational structures might relate to the development of CDL practices, I considered how the digital technologies participants discussed might orient them and how they might be more meaningfully directed towards supporting students' healthy and responsible engagement with these tools and the world. Through discussing the patterns and contrasts in the ways that they related to technologies, participants uncovered important dimensions of digital literacy practices – connections between their experiences with technologies and issues of social or environmental justice – that they did not fully grasp before from their individual standpoints. With a little bit of interventive context, the discussions I shared from focus groups and interviews demonstrated some of the ways in which the IE practice of thinking together and deepening understandings of the extra-local factors influencing participants' everyday experiences of digital media and devices can facilitate opportunities to develop CDL practices.

As outlined in Chapter 2, many scholars – including Fuller and Goffey (2017), Stornauiulo et al. (2017), and Zuboff (2019a) – have detailed how the humans coordinating our digital experiences remain hidden even as their potential role in mediating the social relations we participate in with them grows. Especially when discussing automation and the growing presence of so-called Artificial Intelligence, approaching a study of the internet with students from an IE lens often slipped into discourses that treated the internet as an abstract, disembodied force. The internet is a particularly potent abstraction or nominalization in that – although it is developed and populated by humans – it is often discussed "without once referring to people or what people actually do" (D. E. Smith & Griffith, 2022, p. 5). The discussions in this chapter capture how students often spoke about digital tools or the internet as having control over them. When students discussed the experience of getting a notification about an assignment or a message from a friend on social media, they discussed it as if their phone or the app itself had sent them

the message – not the other users who they were interacting with or the people undergirding the technology. In an IE approach, researchers work to keep concepts grounded in the material world of human actions so that participants can activate insights personally, in actual ways. As IE practitioners Nichols and Ruglis (2021) wrote, “rather than conceiving of social relations as abstract theoretical entities, we understand them to be actual material relations among people” (p. 528). The project of IE is well suited for studying the obfuscated and hidden relations bound up in the world wide web because simply by virtue of tracing the humans involved in the internet’s operation, participants are liable to uncover new dimensions to the relations that impact their online experiences.

Throughout the focus groups I facilitated, it became clear how difficult it is for some participants to be mindful of the fact that the internet and digital technologies involve so many humans – in the creation and coordination of online texts, the life cycle or back end of digital tools. Additionally, parents and educators play a significant – and sometimes under-acknowledged – role in students’ experiences with digital technologies. Hidden behind a screen, the internet can make it harder to see the people on the other end and those supporting the physical infrastructures of digital spaces. Through our group conversations and classroom activities, we were able to trace how human interests and activities are involved in the development and deployment of digital tools. From the literature I reviewed in Chapter 3, I was anticipating having lots of conversations with students about the agency they share with digital technologies. However, our focus on extra-local influences that enter into and shape their experiences drew students’ attention to other extra-local players – closer to home – mediating their textual practices with digital tools. I had not considered the ways in which students’ digital practices are coordered both with people involved in technology’s design, development,

investment, and implementation (i.e., people with whom young people do not locally interact) as well as with people who impact their digital engagements more directly, such as parents and teachers. The IE approach I took to this research organized my looking such that I was too eager to uncover the more exotic-seeming extra-local relations behind digital technologies (in terms of their creation, design, operation, and disposal) and I almost forgot to focus on the more ordinary relations coordinating their use at home and in school.

As discussed, Zuboff (2019b) observed that surveillance capitalism relies "upon the social relations of the one-way mirror" (Zuboff, 2019b, n.p.) – how people deploying digital technologies can intentionally obscure how they are involved in organizing users' experiences. Zuboff's important contribution did not prepare me to think about how parents' or educators' role in deploying digital technologies – although not intentionally obscured – can also be hard for students to understand locally and fit meaningfully within this IE investigation. My reflexive responsibility to students' standpoints rejigged the focus of my research towards these more ordinary relations – while still making space for investigating the relations that underlie digital technologies themselves.

Tracing the social relations relevant to students' digital practices revealed the complex web of people who come together in patterned ways – within a shared orientation to replicable, technological texts – to moderate students' digital lives in shared ways. By collaborating to investigate these affinities, participants began to develop the kinds of CDL practices that facilitate "broader human agency" (Luke, 2012, p. 6) – both in terms of the ways they use digital tools and what they can do with them. This reflects the IE goal of facilitating a more powerful subject position for participants in the ruling relations coordinating their everyday experiences. Broadening students' agency (or "control," as they might say) involved more than investigating

their local experiences using digital tools; it relied on examining the role of various people connected to participants' lives in extra-local ways that were not always obvious or apparent – developing a more sophisticated understanding of how they and others personally and collectively "participate in and empower relations that stand over against us and overpower our lives" (D. E. Smith & Griffith, 2022, p. 10). Through this approach to research and pedagogy, students were primed to gain more mobility within the relations that overpower them, lessening some of the rigidity (or loss of agency) often experienced in such relations. Granted, students are not active alone, and through our discussions, students acknowledged ways in which other players (parents at home, educators at school, online influencers, and big tech executives) sometimes have more power than they do to moderate the ruling relations impacting their experiences with the internet and digital tools. As Welsh and Rajah (2014) pointed out in their own IE research, "it is an overarching lack of awareness and coordination of the work that others are doing elsewhere that makes [participants'] situation[s] especially difficult" (p. 336). Even if students have a narrower scope of agency than others, learning about the ways in which others have more power broadens the potential agency exercised by students. To develop CDL practices that help students meaningfully manage their technology use – tracing how replicable texts or devices are coordinating their digital lives – students must investigate who else is involved in this digital management or coordination. As our research project progressed – especially while the classes were working on their cellphone film projects (discussed in the following chapter) – students pushed themselves to understand more about how they do and can play an active role in these relations. Developing CDL practices centres on building this understanding and figuring out how to personally enact material changes in digital spaces that support the well-being of users and address issues of social and environmental justice.

## Chapter 7: Findings – Digital Texts as Content

"Don't just stand there, let's get to it / Strike a pose, there's nothing to it"

-Madonna, 1990

Smith and Griffith (2022) affirmed that IE research does not study people; it is a sociology "in which people would become the subjects" (p. 4). *Becoming subjects* is like hooks (1989)'s *talking back*; it refers to the experiences research participants have as they become more active agents in the ruling relations that coordinate their everyday worlds. These are the relations "that, though [students] participate in them, impose their objectified modes upon [them]" (D. E. Smith & Griffith, 2022, p. 7). As described in Chapter 6, over the course of this project, students tried to develop more complex and clear understandings of the relations they participate in, which rule the internet and digital tools. This helped them uncover how they might navigate and organize those relations more critically – what I am describing as developing more CDL practices.

On top of the formal features mediating students' digital experiences, this research project also investigated how students might contribute to the textual mediation of these relations (i.e., take advantage of their participation in them) through the actual content of the digital texts that students read, write, and share online. In this chapter, I aim to analyze how participants felt oriented by or were able to organize relations through digital media circulated online – the more conventionally textual discourses that pass through digital tools. I will discuss more analytically the content of the digital texts that my participants described sharing, and how they were connected to online discourses – conscientiously or incidentally. I will also explore some of the content that students engaged with and created as part of this DPVM research project. The ideas

expressed in the content that I will look into here reflect many of the formal concerns discussed in Chapter 6.

I will begin by introducing the cellphone film DPVM project and examining one of the group's chosen focuses: investigating "body image" and the comparison dynamics of social media. This topic was only showcased in one group's arts-based inquiry, but it featured in several groups' discussions. I will lay out some of the conversations I had with students around this topic insofar as they related to students' uses of digital technologies and the content for texts they share digitally. This will lead into my discussion of how the content students engage with online affects them and other users. As well, I will unpack how arts-based DPVM approaches to research or learning were found to be especially impactful to participants' investigations and their CDL practices going forward.

**Cellphone Films: Explicit Participation in Textual Mediation**

Before we started filmmaking, I facilitated students through four exploratory classes where they uncovered and articulated ways in which their standpoints – considering their digital practices and their everyday experiences online – connect them to issues of students' well-being and social or environmental justice. Then, based on the shared interests and concerns that they had expressed, their classroom teacher and I connected them with like-minded classmates and asked them to decide on a topic. We instructed them to choose something they believed was significant to all of their experiences of digital technologies that they wanted to investigate further. I was a bit concerned about what they might choose because very few students seemed to be explicitly interested in content related to critical, social justice causes. When I had asked them what kinds of texts or content they were familiar with online, only a handful mentioned anything related to racial justice, current events, mental health, or the environment. Instead, students told

me that they view, share, or comment on content related to humour, gaming, animals, baking, history, travel, or sports. However, most groups chose topics that related to their well-being and/or social justice causes. In retrospect, I can see the impact I had on their decisions; in the few weeks that I had been exploring these topics with students, many had developed an interest in how some of these critical issues were connected to their personal, material experiences of digital tools. By encouraging them to engage these topics for their investigations, I hoped they would both understand the way their digital practices connect them to issues of wellness and social/environmental justice, and consider how they might be able to challenge some of the problematic aspects of their digital lives.

Each group's focus was different, but through a bit of interventive support from myself and the classroom teacher, we were able to connect each group's focus to a need or desire to understand and develop more CDL practices. Three groups of students chose to focus on how communities in the Global South are affected by our digital and consumer practices in Canada, one group inquired further into how big tech companies that operate like monopolies influence their online activities, three groups explored online harassment, two groups considered how digital technologies that they use relate to environmental issues, one group investigated how their online communities impact young people's ideas about beauty and identity, one group made their film about the device overuse that they struggle with, and three groups looked at data tracking online and how this relates to their digital experiences. Working with every group individually, the classroom teacher and I made sure each had gathered enough relevant research to meaningfully inform their creations. We then supported each group as they developed a storyboard and filmed short cellphone films to capture their inquiry process in creative ways.

These arts-based DPVM inquiries aimed to support students' engagements with digital technologies – both in their films' explicit content and in the process of researching, making, and showcasing the cellphone films. For three class periods, students planned, filmed, and edited their films, developing CDL practices related to their inquiry topics and the process of creating and sharing cellphone films. On my penultimate class with the students, we had a screening during which most of the groups played their cellphone films for their classmates, inviting other students to express how they felt similarly impacted or how their experiences revealed different dimensions of each problematic. As I will explain, the reflections that came out of students' cellphone film inquiries helped participants connect their own standpoints with their classmates' and consider how they can collaborate further towards impacting the ruling relations that coordinate the organization of their digital experiences.

***An Example: Comparison Dynamics on Social Media***

Karen, Sam, and Billy created a cellphone film about the comparison dynamics of social media, specifically looking at TikTok and how it informs their understandings of how someone of their age and gender is expected to dress, look, and behave. During our focus groups, Karen, Sam, and Billy all said that they were not as influenced by the behaviours that they see on TikTok when compared to their younger peers and siblings. Discussing TikTok users younger than them (under 13), Billy lamented that "they're so young and they're posting photos of themselves in a bra, or barely in any clothes...just because they're craving [attention from] random people." Sam agreed claiming that a friend's younger sibling is posting these kinds of videos just because "it attracts a male gaze. Cause they think it's an easy A [i.e., validation]." Karen pointed out that the behaviours that come to be seen as normal due to social media discourses go beyond the way that young people dress. She focused on "vaping" as a trend

popularized by TikTok among many of her friends and peers. Karen, Sam, and Billy agreed that many of their younger peers' digital literacy practices are impacted by these social media apps, which led to a discussion about the relations that orient people's behaviours on the app: automated and opaque algorithms, and the whims of other users. Karen, Sam, and Billy explained that they wanted to make their cellphone video as a way to push back against this and suggest that young people *can* moderate their own social media engagements in line with their values – even if these practices are not validated or amplified by a social media platform and the people behind it (i.e., administrators, programmers, and other users).

Discussing their experience creating their cellphone film, Karen, Sam, and Billy developed a sophisticated analysis of how the discursive and textual relations with which they participate online impact their identity and digital literacy practices. Sam clarified how TikTok operates to normalize and popularize certain trends, explaining that the texts (i.e., videos) with which people engage on their TikTok feed informs what they believe to be normal:

> People are getting this app, like at the age of like six right now. And they're seeing these girls do this stuff and they just think it's normal...like vaping and stuff...going to these random parties and meeting up with these random guys every weekend.

Sam illustrated what Gee (2015) explored, as introduced in Chapter 4, that the activities young people perform on TikTok – wearing (or not wearing) particular clothes, and partaking (or not partaking) in particular activities – become the "specific socially recognisable identities engaged in specific socially recognisable activities" (p. 171). Sam went on:

> [Young TikTok users] are seeing like these kids that they think is what they should be in that they think that's the standard they need to be, be who everyone wants to be. They see

> these videos and then think, K, I have to smoke. I have to show more cleavage. I have to do all this...to be accepted.

The ways that young people behave have "consequences for their social standing among peers" (Wohlwend, 2009, p. 59), but not in a fixed way. Watching the cellphone film that Karen, Sam, and Billy's group made and thinking about their comments in our focus groups reflected Smith (1990)'s work, as discussed in Chapter 2, around beauty magazines and how the discourse of femininity is far from the rigid, corporately-managed construct that it sometimes seems to be. Despite today's omnipresence of digital texts that represent idealized forms of femininity, the video that Karen, Sam, and Billy's group made highlighted their belief that students' self-conscious involvement in gender or beauty discourses can still support their more active involvement in the ruling relations coordinating their understanding of femininity.

In creating this film, Karen, Sam, and Billy were presenting a more feminist layer onto the textual discourses that inform how they and their peers feel compelled to behave. Like those women who Smith (1990) described as "play[ing] with, break[ing] with, and oppos[ing]" (p. 204) the texts coordinating the ruling relations of femininity amplified by the 90's fashion industry, Karen, Sam, Billy and their group-mates used their cellphone film to tell a different story than the one they often see repeated online. They created a film about a young woman who is anxious when she compares herself to the women she sees on social media. She tries to change herself to look more conventionally attractive – insofar as social media coordinates what is considered attractive – but ends up even more depressed. In the end, she overcomes her insecurities by befriending others who think she is beautiful and embracing her own, idiosyncratic sense of femininity. Instead of succumbing to the oppressive influence of the ruling relations that coordinate what gets framed as idealized femininity on their social media feeds,

these students became part of the conversation through their collaborative cellphone film creation. The story they filmed offered a powerful reframing of how women are expected to look and behave. Their video shared a clever narrative that mirrored the participants' power in creating this film; the character in the film was affirmed by peers who had a different understanding of femininity and beauty just like the potential viewer of this film might be affirmed by the creators' different understanding of femininity and beauty – as represented in the film. Billy, Sam, and Karen's group decided not to share their cellphone film over TikTok, but the process of creating and sharing their artistic creation with friends and classmates was an affective act of conscientious participation in the material, textual practices organizing the relations that coordinate students' experiences with beauty standards. What can appear as objectified ruling relations became the active, even flexible, social relations in which students participate.

It is important to note that not all of the students who contributed to this film saw these relations as so pliable. While discussing some of the power students have to contribute to the textually mediated discourses online, Sam was initially adamant about her lack of control. She contributed diligently to her group's cellphone film but insisted that she did not believe it would impact the relations by which she and her classmates understood and performed femininity. She admitted to viewing content on TikTok and then posting her own content inspired by or commenting on what she had watched but claimed that her own positive content "can't personally break the cycle" of participating in textually mediated discourses that promote unhealthily objectifying self-representation standards for young women. She went so far as to suggest that the pressures women face as a result of popular media are "never going to change." Her group-mates tried to push back and suggest that students do have power, at least within their

own immediate social media networks, to affect the kind of content that others see. Karen pointed out that they cannot help but impact the other students in their class, their families, and their friend groups. She nuanced Sam's concern by suggesting that their positive content can "influence" others, but it cannot "control" others. Billy built on the ideas that Sam and Karen had laid out by bringing up celebrities, influencers, and even fictional characters whose online presence has more power to impact users than the average 13-year-old, like her. Billy said that more popular internet users set a standard, contributing disproportionately to the ruling relations that orient the textual ideal of how young women should look and behave. We concluded together that although it is difficult to affect large-scale changes in massive social media spaces, every user (to greater and lesser extents based on popularity and reach) can and does impact the people who engage with the texts that they create and share, especially replicable ones that can be commented upon, shared, or remixed. As Wohlwend (2009) described, by creating their own video, Sam, Billy, and Karen had the opportunity to "layer additional meanings and identities onto prior shared meanings and identities sedimented through previous play negotiations and enactments" (p. 76). In an article about creating digital games with young women, Fisher and Jenson (2017) explored how this type of transgressive participation in media production can provide participants with opportunities to become more "active in the construction of their own subjectivities, leveraging different aspects of their identity and exercising an institutionally sanctioned (albeit temporary) autonomy to challenge this discursive positioning" (p. 95). Creating a cellphone film in class as a response to short-form video content from TikTok may just be a temporary challenge to dominant discourses on gender. However, facilitating students' active production of feminist narratives as part of an institutionally sanctioned educational activity offers up an additional layer that can contribute to the reorganization of participants' and

their peers' shared understandings of young people's identities and behaviours in personally validating and emancipatory ways.

Sam – originally the most reluctant to acknowledge the ways she and her peers can co-coordinate the relations that co-coordinate her and her peers – expanded our conversation by pointing out that this cycle happens both online and off; she mentioned the ways her conversations with parents, family, and friends change her approach to using the internet and her phone. Without pushing back, I tried to differentiate between replicable texts that can affect multiple people extra-locally and the conversations that students have locally with family or with one another. However, at the same time, I was reminded of Smith and Griffith (2022)'s insistence that even when we "set aside our text to think" (p. 37) – or close our laptops and put down our phones – we are still "always active in social relations" (p. 36). I brought this up with Sam and we discussed how even these focus groups could be seen as one such offline space that, in a narrower but similar way to the collective spaces where students exchange ideas online, facilitates individuals coming together to influence and build upon one another's ideas. Regardless of scale, we are always spinning together threads from our own experiences and extra-local insights; these webs of thought and discourse revise the ways we understand and participate in the actualities of everyday life. Although stitching these threads together is a form of research for me, it provides a model for an approach to education that centres students' experiences and expertise to develop and share critical content and competencies relevant to their own and their classmates' interests and needs.

Karen, Sam, and Billy's cellphone film was just one example of how embarking on an arts-based, DPVM investigation gave students a controlled and self-conscious model for drafting and inserting their own texts – and thereby values or ideas – into the discourses mediating the

relations that organize their digital entanglements. Focusing on global inequity, big tech's impacts, cyberbullying, ecological problems, device overuse, and digital surveillance, groups' various films uncovered similarly critical perspectives that reflected aspects of their digital landscape and helped them develop CDL practices that were meaningful or relevant to them. After students shared their videos with one another in class, there were two groups that opted to share their cellphone film with a larger audience: an online cellphone film festival. However, even for the other films that were only screened within the class, facilitating a self-conscious opportunity to create and share digital texts exploring topics that were important to students provided an educational rehearsal that mirrored many of their everyday experiences of digital literacy practices, building towards more critical digital engagements in and out of school.

**Social Media Discourses: Mutual Interest and Transformation**

During the final focus groups, I asked every participant to share some reflections about the cellphone films they made and the ones that they watched from other groups. Many students connected the digital filmmaking activity to their everyday digital experiences, making and sharing cellphone videos over social media. They did not immediately understand how their contributions to online discourses – over Instagram, Snapchat, TikTok, or Facebook Messenger – allowed them to participate in the mediation of relations that coordinate their and their peers' everyday experiences, online and off. However, they were aware that their digital texts did influence one another in different ways. For example, Jeremiah was quick to brag about the role he plays in his friend group, sending around funny videos and posts to cheer people up, especially when someone is going through a difficult time. Unfortunately, almost all students (even Jeremiah) lamented that their control online was not nearly as powerful as other users who had more followers. Jeremiah said he wanted to impact relations beyond his friend group but

believed he would be unable to until he was older: “When I grow up, hopefully I would have more power than I do have now as a kid.” Jeremiah discussed his dream of becoming a professional athlete and how this would allow him to be more popular online, which would facilitate opportunities for him to share his political opinions in ways that – he believes – could actually make positive changes for people.

As discussed in Chapter 2, “different people are situated differently and possess unequal degrees of power” (Winner, 2020, p. 28) when participating in textual discourses online. However, even if someone’s participation in these discourses and relations is not as potent as other users, and even if that person does not always recognize the control they have within their social networks online, they “are always active in social relations” (D. E. Smith & Griffith, 2022, p. 36). Other students in Jeremiah’s group affirmed the power that he has in their lives through the funny and loving videos that he creates and shares, but it was still difficult for most students to acknowledge or embrace the role they play in shaping online discourses and – ultimately – in textually mediating each other’s lives everyday. Through this research project, I aimed to help students uncover this reality so that they could make positive social change – to whatever extent they might be able to from their standpoints. Even if they do not embrace their potential power conscientiously, I hope that developing students’ CDL practices in this project, and facilitating their creation and dissemination of social justice-oriented cellphone films helped prepare them with knowledge and formal practice that might support them to meaningfully involve themselves in the textual mediation of the relations undergirding their digital experiences. Even if students’ active role is not actively understood, they can still help impact others in critical ways.

In Seth and Alexa’s focus group, both students were more willing to acknowledge their role in moderating the social relations that organize the discourses they participate in over social

media. As the following example illustrates, we were able to trace actual ways that what they post impacts others. Seth was trying to explain why they re-share some social justice posts and not others. They discussed the factor of relevance, saying that they are more likely to share things that "affect [their] friends and family." For example, they recently reposted something about the "quality of like water and stuff to like us, whereas like Indigenous people and all my little siblings are Indigenous so like that like, yea." (It is is a bit unclear from the transcript but Seth was explaining that they posted something on social media about Indigenous communities in Canada who cannot access clean drinking water because they have Indigenous siblings.) Alexa said that she had heard about the issue of a lack of clean drinking water in Indigenous communities before and then realized that she heard about it from Seth's Instagram story. This short exchange uncovered the potential of students' discursive choices online to influence their peers and other internet users' understanding of social justice issues. Discussing the relevance factor further, Seth explained that another way that they decide what to share on their social media accounts is based on "what other people, like what my friends are reposting." They clarified what they meant, suggesting that "if a lot of people are reposting [something], I'm going to repost it too, or if it's like, oh no one's reposting this, so it would be weird if I did." This comment about what motivates or obstructs Seth's textual contributions online highlights how much their friends' digital literacy practices coorder their own practices. I asked Seth and Alexa whether they could think of anyone who would post or repost something that was not being widely shared and they said, "not really" or "very few people." We concluded the conversation by considering when and how we might want to be one of those "few people" and play a more active role in shaping trends about what content is shared online.

**Affordances of Arts-Based, Digital Inquiry**

During the final focus groups I held with students, we discussed which of their classmates' cellphone films stood out to them or felt especially meaningful. Most students responded by citing videos that explored issues that reflected their own concerns and standpoint. For example, some of the students who made videos about data tracking online were most impressed by other videos about similar topics. The same was true for students who made videos about online harassment.

Another common response that students gave was that the most compelling videos were the ones that managed to do more than simply reporting facts. The videos that were described as memorable due to their affective artistry used various approaches to move their viewers: a video about the impact of Netflix's tracking used clever editing and special effects, a video about predictive advertisements was particularly humourous to students because of an inside joke they had about Yop, the yoghurt drink, and finally, a video about the exploitation of technology workers in the Global South appealed to students through dramatic role playing and empathetic storytelling. Students' connection to the more artistic films reflected Mitchell (2011)'s ideas about the haunting potential of arts-based approaches to inquiry – affecting the development of CDL practices in powerful, though mysterious ways. Throughout this research project, participants deepened their understandings of digital literacy practices. It was not always clear though whether this resulted in a deepening commitment to approaching these practices more critically. In the next chapter I will explore some of the ways that I tried to recognize the repercussions of this research.

During our class discussions about the cellphone films and throughout the final focus group sessions, even the cellphone film creations that did not have a particularly moving artistic component were still brought up as meaningfully motivating students to engage with CDL issues

in deeper ways. Students in several focus groups described their feelings about digital, audiovisual texts and the greater affect such media can have beyond word-based and analogue texts. Seth brought up the brevity of short-form video content online and how the speed with which they can be consumed makes it more likely that Seth and their classmates will be open to engaging in that particular form of textual discourse online:

> It's easier. Like, in my opinion...videos are more effective, especially like shorter ones. Because like, if it's like something [text-based] people are like, oh, I don't have the time to read this. So they wouldn't. Whereas like the videos they'll be like, oh...I can take 10 seconds of my day to watch it.

Alexa also felt audiovisual texts online were more powerful than conventional printed words. She explained:

> I feel like I understand things better when I see it or hear it more than when I just read the text. And it's definitely more interesting to watch. Then you can imagine it in your mind more than if you just read something off the page.

Alexa feels like audiovisual texts are more personally affecting and can engage her in topics that might otherwise not move or even interest her.

Many students in other focus groups echoed similar feelings, explaining that the videos they watch online give them the feeling of having first-hand experience in arenas that they have never personally experienced. Seth and Alexa explained that with the personal connections of social media, content shared there is never impersonal; it is always from a “friend-of-a-friend-of-a-friend-of-a-friend.” This is important because students were most interested in social media campaigns or social justice causes that were close to home or that directly affect them or people with whom they are close. Seth spoke about how social media helps their classmates gain

awareness of how they may relate to social justice topics with which they might not previously have felt personally connected. With the power of audiovisual texts shared on social media – especially those with artistic elements – students can gain deeper feelings of connection to campaigns and causes which they may not feel like they have first-hand experience with, but which may impact them or be impacted by them. Seth used the example of sexual harassment to discuss the value of this affordance:

> I think a lot of people are aware of [sexual harassment, but] the guys seem to make more of a joke out of it or are completely oblivious...because they aren't in that situation; there's no way that they could understand it firsthand...but I feel like everybody should know about it.

Seth went on to explain how social media not only spreads awareness about important issues like harassment but also gives people the personal feeling of connection that might motivate them to involve themselves in mediating the relations that organize these issues.

The artistic affect was not the only aspect of cellphone films that students were interested in discussing. Alexa added another affordance of digital texts over traditional analogue texts when it comes to social justice causes. She explained that:

> With campaigns, it spreads a lot faster online, definitely than before, because like...you didn't have Instagram and you couldn't share it. And now I think like kids are on social media, [so] it's a lot easier to share, especially because kids are getting phones a lot younger.

The other nuances of sharing cellphone film content that students were keen to discuss revealed unique affordances of digital tools more generally – the ease by which digital content can be consumed, the personal connection that they can help participants feel to important issues that

may not affect them personally, and the pace by which online campaigns can spread – for raising awareness and to motivate material actions and change. Engaging DPVM research to learn about students' digital engagements helped ensure that the research was relevant to students' standpoints both in terms of focusing on technologies they use daily but also engaging with textual, technological processes by which their everyday digital literacy practices are actively organized.

**Conclusion**

Whether sharing content online, in class, or just among friends, students' discursive practices today are often mediated through replicable digital tools, often as replicable digital texts. As I have been exploring, texts are most relevant for an IE inquiry when they are "replicable texts that can be read or seen or heard in more than one place at more than one time and by more than one person" (D. E. Smith & Griffith, 2022, p. 9). Considering the increasingly digital nature of students' social and educational lives, these replicable texts have become more common and more replicable. My opening chapters looked at how the internet and mass-produced smart phones and tablets are increasing the potential for texts to be replicable at an exponential rate, but they are also democratizing the related literacy practices – providing average users like my research participants opportunities to involve themselves in creating, sharing, or commenting on these replicable texts. The focus groups I facilitated both served as examples and explicitly discussed ways in which students are already engaging in the textual mediation of their contemporaries' CDL practices, even offline. As Smith and Griffith (2022) wrote, "inquiry in institutional ethnography is always a dialogue in which...the discourse is being changed" (p. 20). With the added reach and multi-directional potential of digital systems, this potential change is more potent – even as big tech monopolies and surveillance capitalism makes

it more difficult to realize. Aided by the affordances of DPVM and arts-based creations, participants learned more about how their digital literacy practices may impact their everyday worlds. In the following chapter, I will share some specific instances where participants demonstrated a deepening commitment to developing CDL practices and engaging with important causes related to social and environmental justice, to their own well-being, and to the well-being of others.

## Chapter 8: Participatory Work – Research as Education

"I am curious these days...about whether or not research can be *a form of* direct action, *serve the aims of* direct-action efforts, while also influencing policy and practice change in and across public sector institutions."

-Naomi Nichols, 2019, p. 192, italics in original

When Dorothy Smith set the foundations for IE, it was never meant to be a sociology serving academia; it was designed as a sociology for people (D. E. Smith, 2005). Working from participants' standpoints, IE reflects the commitments of student-centred approaches to teaching and teacher-centred approaches to professional development. As Nichols and Ruglis (2021) explored, IE provides a "research and analytic process that would bring into view and make accessible the institutional and political-economic processes through which people's everyday lives and the problems they encounter are organized" (p. 528). With my research focus on students' ability to understand and navigate digital texts more critically – and educators' or schools' roles within this – the process of helping students and educators confront and engage the relations organizing their everyday experiences of digital technologies readily opened up ample opportunities for learning about and shaping participants' involvement in the institutional and political-economic processes that relate to CDL education in school and in students' CDL practices more generally. It felt like a form of direct action. Many participants had such limited experience explicitly investigating the digital worlds central to their everyday that they committed meaningfully to changing their digital dispositions, simply by virtue of turning their attention to (i.e., researching) these systems and analyzing them together.

As I have brought up throughout my dissertation, I had a difficult time delineating my identity or role as a researcher and as an educator or mentor while working with the Grade 8

students and their educators. Although I started by framing my dissertation work as research, the activities I facilitated functioned as both research and learning opportunities. Interviews and focus groups, engaged interactively, doubled as opportunities for education. The more creative activities – like comparing Google searches, guided online research, and of course the arts-based cellphone film inquiry projects – mixed research and pedagogy more explicitly. During these experiences, I thought a lot about the ways in which the research relationships I was developing with my participants resembled educational or mentor relationships – serving the community of participants with whom I was working, while also serving some abstract notion of knowledge generation for a PhD dissertation. IE aims towards actual, material research impacts that directly support participants, so I tried to embrace the former – serving participants – while using those experiences to enhance the latter – as represented in this dissertation. To that end, I will share some vignettes from my research where I was most aware of the blurring or blending of researcher/educator identities.

**Vignettes: Blurring Roles**

Throughout my research, I aimed to help participants read their worlds differently so that collectively, we might make changes to how we relate to digital technologies. The first two vignettes consider how my role as a researcher/educator may have influenced the other educators I was partnering with, in terms of how they hope to engage CDL education in the future. The third vignette and the ensuing discussion looks more directly at student participants and how my relationship with them combined elements of research and education. By sharing these vignettes, I will explore how the approach I took to my dissertation project might inform pedagogical efforts to develop students' CDL practices and to support educators who may benefit from building more explicit CDL development into their professional practices.

***Chips***

We had plans to get together to do another interview after he finished work, but he was not responding to my texts. I know how busy teaching can be, so I assumed he was just waiting until the end of the day to respond. But by 5 PM, I was no longer so sure. I sent him another message to check if he was still up for meeting and he immediately replied, "yes." Coincidentally, I bumped into him on a bike path less than a minute after receiving his response. He was on his way home from work and seemed overwhelmed. After we laughed about how small the city is, I said something about our upcoming meeting, and he looked overwhelmed. "You know what?" he said, "I think I have to postpone our meeting after all." He started to tell me about everything he had to get done for the next day of classes: marking, prepping, and decompressing. "No worries," I said, but then we started talking about his school stresses and he kept asking my advice on things. Perhaps because I have had more teaching experience, he was very engaged with my perspective on some of the challenges he was having at work. I had to run some errands so told him we would chat soon, but as we were parting ways, he changed his mind again. "Can we meet up this evening after all?" he asked, "I think talking things out with you is more important than getting my marking done," he laughed. I agreed and we set a time – a couple hours later – to meet at a hidden lookout with my voice recorder and some treats.

We ended up meeting for over 2 hours and our conversation went everywhere. We started on topic, discussing his students' digital lives and how school impacts them. Our conversation kept getting pulled in directions that made me feel like a mentor, advising a new teacher. Granted, Chips is actually older than I am, but as a first-year teacher, he recognized that I had insights about his school's dynamics and culture that he was just starting to understand. Whenever our conversation slipped in the direction of mentoring advice, I felt like I had to pull it

back towards my research questions. However, as the evening and our conversation progressed, I started to appreciate the value I could provide Chips. As a critical researcher, exploring an inductive, participatory project that – based in IE – is primarily aimed at serving the community with whom I'm researching, I realized that helping Chips was actually more important than having him help me. The mutually beneficial and deeply relational character that our conversation was taking felt like it honoured the research commitments that brought me to IE and to participatory work in general.

Out of respect for Chips' privacy, I will not get into the specifics of our conversation, but Chips outlined his educational values and the obstacles he faces when trying to embody them at work. He told me that "habitually – out of self-preservation – [he] check[s his] instinct to push back against a lot of things." Through our interview and conversation, we strategized about how Chips can effectively push for the things he cares about educationally while still respecting the culture and expectations of his employer and students. This conversation, and our relationship more generally, demonstrated the value that research interventions can have in supporting educators to stand up for what they believe is important. Especially focusing on critical approaches to digital literacy, embracing the critical concerns that Chips has for his students' learning is an essential part of developing authentic, sustainable approaches to CDL education in his classes.

***Mack***

When I interviewed Mack and Gayle, I was surprised at how nonchalant they were about everything I was sharing with them. As I told them about students' concerns related to the digital technologies that they were expected to use for school, both Mack and Gayle were on board with the critiques and empathetic with the students. However, it was not until after my second meeting

with Mack that he told me he had set up a meeting with the school's administration team to discuss some of the things that had come up during our interviews. I was very pleased to hear about Mack's more active involvement in shaping his school's policies around digital technologies and reflected on what had changed for him. As described, Mack had been on board with students' concerns from the start, but collaborating to investigate how those concerns related to the school's practices and policies facilitated the grounding for him to involve himself more conscientiously into the relations organizing students' and educators' digital experiences. During our final interview, Mack shared that he had told the administration team about some of the conversations he and I had been having during our interviews, as well as some of the concerns he heard from Gayle, Chips, and students (not exclusively those involved in the research project). He focused on the fast-paced introduction of digital tools in school without enough reflection or support, the role that students' families and teachers are expected to play in supporting CDL practices, and the specific ways that he believes classroom teachers can integrate CDL education into their classes. Mack reminded the administration that although their students may know how to use digital tools for a lot of purposes, they do not always have the basic understandings we expect (e.g., how to organize files into folders, how to email a teacher, how to access online resources, etc.), and their knowledge gaps are different depending on what kinds of supports they are receiving at home.

By the end of the meeting, Mack felt like he had helped the administration understand ways in which the school had been "assuming [students] know how to do it" (i.e., how to engage digital tools critically), even when students did not have that knowledge. Mack explained that they had together discussed why this assumption is misplaced and concluded that students "don't know how to do it...because a lot of the teachers feel like it's not [their] job," relegating the work

of CDL development to parents, other teachers, or students themselves. As a result of Mack's intervention and other like-minded influences, the school is now planning to offer more explicit instruction on how to use digital tools through new course offerings, more professional development for teachers on how to include CDL practices in their classes, and more consistent and strategic uses of digital supports for formalized school functions. The next stage, Mack explained, will be to figure out what these new courses, professional development, and formalized technology suite might look like, and where these new educational focuses might fit within the school's programs and schedule. With the growing significance of digital technologies in educational spaces and in students' lives, the kind of conversation that Mack initiated with the school's administration would likely have happened at some point, regardless of the research I facilitated at the school. However, I was pleased to see my project serve as a catalyst for Mack, encouraging him to initiate these conversations with members of the administrative team, and beginning to orient the school in more critical directions.

***Hugh***

Towards the end of my time at the school, I received an email from Hugh, one of the students I had chatted with the most. The subject read: "talking about the digital world and can I do more meetings please cause I love talking about this." (The body of the email said something similar.) I emailed him back and we arranged an extra meeting, one-on-one. After a few minutes of our meeting, it became clear that he had a fairly specific agenda; he wanted to ask me about non-fungible tokens (NFTs) and cryptocurrency. He explained that his friends have been giving him a hard time for his interest in these technologies and he wanted my perspective. Luckily, I have been trying to keep up with critical readings about these digital trends (Morozov, 2022) and had a lot of information to share. We discussed the way that NFTs and cryptocurrencies are

valued and the potential for scams or exploitation. We also talked about the environmental concerns that blockchain technologies pose. Much of the meeting was dominated by these topics, but Hugh also shared some concerns about "automation," using the term explicitly. Just a couple months earlier, when I first met with Hugh, he had asked me what that term meant. I was delighted to hear him using the term effectively to describe how he thinks technologies are changing and will continue to change in the future.

As I listened back to the recording of the conversation and prepared a transcript of it for analysis, I felt frustrated because I had done so much of the talking and felt like I had not gathered very many insights from the meeting to support my dissertation work. I spoke to my partner about it when I got home and after expressing my frustration, he pushed back on my positivist framing. He asked, "Do you think the meeting was worth it?" "Not for me," I responded, too quickly. "Do you think it was worth it for the student?" he asked. I paused before replying. "I think so, yea." My partner followed up with, "And who's your research supposed to be serving?" He had made his point. My participatory work aims to support participants and generate findings together – not extract data from them at a distance. Although the publications and theses that are central to a PhD can be important, they will not be read by the students who were the main community I was working with for my research. In the spirit of participatory IE work, my aim is to support the students. My "dialogue with respondents brings the most value to [my] ethnography because it makes what they do/their work – in the generous sense – observable to themselves as well as to [me] – as their actual doings" (D. E. Smith & Griffith, 2022, p. 48). Once I shifted my perspective (with the help of my partner), I remembered the value research can have for participants in situ, through research activities, conversations, or interventive focus groups that build supportive teacher- or mentor-like relationships.

Chips also helped me appreciate the way my research was impacting Hugh. When I told him about the one-on-one meeting Hugh had arranged, Chips suggested that:

> Hugh tested out a theory on an adult who he's clearly developing trust with (kudos to you) and he probably doesn't have a lot of people he can talk to about this. The adults in his life...don't understand the internet. You got one of my students in a place where he's probably really relying on you right now.

Although I came to appreciate the extra meeting with Hugh and the relationship we were developing, meeting one-on-one still felt like it missed the opportunity to share Hugh's insights with his peers and get their perspective on the things we were discussing – to complicate or corroborate the ways we were thinking. However, instead of only prioritizing research activities that support larger groups of participants, it can be important to consider the value of thinking together on any scale – in focus groups, one-on-one meetings, or in publications like my thesis. Such dialogues can support the development of students' CDL practices or of educators' and researchers' approaches to working with students to develop those practices in contextually relevant ways.

***Others***

Beyond these three anecdotes, there were several other instances during my field work when I had similar realizations – moments when the research seemed more like I was facilitating student learning through data analysis and sharing, as opposed to a conventional approach to data collection. There was the interventive focus group where Alexa told me that she had never thought about the environmental implications of digital tools until we started discussing it in class, or the spontaneous activity where Jeremiah, McBin, Louis, and Hugh told me that their understanding of personalized Google searches was based on the research activities that we had

undertaken together. Another moment when this became clear was during one of the full-class sessions when over half of the students I was working with revealed that they had never realized that worker exploitation and problematic extractive practices were involved with the production, operation, and disposal of the digital tools that they use. Several students shared that they had "taken [digital technologies] for granted" and that they would try to be more aware of the critical dimensions bound up in their everyday experiences with these tools.

**Conclusion**

At the end of my time with the students, I asked them all to share what they thought the most important take-away was from the things we had explored together. A handful mentioned topics explicitly connected to school (i.e., assessment portals, organizational apps, digital assignments) but a majority of students discussed topics related to what they share on social media and their experience browsing the web: tracking, surveillance, content moderation, algorithms, personalization, echo chambers, and device overuse. When pressed on these issues, it became clear that only a few students had given these topics much thought before they participated in this research project. Nichols and Ruglis (2021) laid out ways in which young people can benefit from being facilitated through an IE investigation. When students are treated as research partners who are being facilitated through their own IE inquiries, this approach reflects an authentically student-centred and inquiry-based approach to pedagogy. Nichols and Ruglis (2021) wrote that "the experience of participating in a study like this has the potential to be pedagogically transformative for young people, who have opportunities to develop and implement new strategies for making sense of their lives and experiences" (p. 547). As earlier chapters demonstrated, there is a lot that researchers can learn from the experiences and reflections of students, inquiring around topics that students feel are important for developing

their CDL practices. However, in the spirit of an IE investigation, I am more interested in what *participants* can learn as a result of this approach to research. The most impactful and transformative conversations I had were those I had with participants – unpacking, engaging, and hopefully enhancing the ways they relate to the digital technologies central to their everyday experiences in and out of school.

# Chapter 9: Conclusion

"The answers are important, yes, but more important is the opportunity to think and feel through these questions collectively."

-Eve Tuck and K. Wayne Yang, 2013, p. 277

The teacher who made me fall in love with teaching was my English and Theatre teacher in junior high, Mrs. McKay. She was a bit too passionate maybe. She insisted that everything matters, that we should never say "whatever," that we should go to bed each day having made the world better than when we woke up, that we should move through time and space with dignity and respect for ourselves and others. As I started to write this conclusion, I remembered something she once told our class about conclusions: they are impossibly inadequate. She said that she had written a perfect one once, but she had lost the paper and never got there again. I felt the same way as I tried to figure out how to approach this ending to my dissertation; especially with my research and pedagogical commitment to centre student participants, it felt presumptuous to be the one making the final conclusions. Before Mrs. McKay passed away a decade or so ago, we had been in correspondence. I went back to those emails as I was working on this conclusion and found a particularly significant conversation. I had just started teaching high school and she wanted to remind me of her teaching philosophy: that students all already know everything they need to know but that they cannot always access that knowledge. In her view, the educator's role is to awaken knowledge within a student; to make it accessible. She contrasted this to the maybe more conventional metaphor of the mind as a hollow vessel into which the educator stuffs knowledge.

In my response to her email, I wanted to tell her how much this philosophy resonated with me; I wrote something about what I had been doing in my classroom (at the time I was

student teaching) to create the conditions for student-centred inquiries and to avoid being the expert. In her reply (one of her final messages to me) she wrote: “don't forget you ARE an/the expert.” She did not explain what she meant, so I tried to think about how – even with the goal of facilitating a process of discovery for participants who in their “everyday worlds...are expert practitioners” (1987, p. 110) – I might be an expert. Mrs. McKay’s reminder helped me understand that (a) my openness to centring participants’ expert insights can function alongside an openness to expertise that I gain as a researcher (and educator) from what I learn with participants about their CDL practices and digital worlds and (b) it takes a certain expertise to facilitate the pedagogical or research relationship needed for Mrs. McKay’s approach to learning or for an IE approach to sociological studies.

I am becoming an expert in facilitating IE research within a school setting, and in CDL education – at least as I have framed IE and CDL in my research. Smith’s IE project rejects the conventional approach to sociological expertise – studying people – and embraces the expertise that can arise when one learns *with* people, studying the world around them. The actual knowledge that each approach garners is different, but the more important difference for me is the way the IE approach values participants – reflecting the way Mrs. McKay valued students – as experts of their worlds. The expertise of an IE researcher can only be valuable insofar as we involve ourselves in supporting our expert participants as they learn about and work to improve the material conditions of their everyday worlds.

**Revisiting Research Questions**

To bring together some of the analyses I shared throughout my findings, I would like to return to the research questions that oriented the design of my project and the directions of my inquiry with participants.

***Question 1: How are the internet and digital technologies organizing or coordinating students' experiences in shared or related ways?***

From the work I have done collecting data and exploring it with students, educators, and on my own, I realize that the myriad answers my participants uncovered to this question throughout the process of this research project are not as meaningful as the in-situ process of investigating the question with students from their standpoints. For some of the students I worked with, understanding the ways they were similarly oriented by the digital texts and tools in their lives involved reflecting on how comparison dynamics on social media influence behaviour and how their literacy practices are part of the discourses organizing this exchange. Other students wanted to investigate the ways digital tools that were part of their formal educational experiences facilitated an overwhelming pace of life that did not make space for health and well-being. The various conclusions that students came to as we explored how the texts of the internet and of digital technologies were impacting their activities in similar ways reflected concerns and aspirations relevant to their everyday lives. However, though these conclusions were significant to the first dialogue of my IE work – the conversations I was having with participants – the relevant conclusions in this second conversation – my ethnographic dialogue with you, the reader – are more about the unique approach this research took to developing CDL practices with students (RQ1), how we mapped the various people and social/environmental justice issues involved in the texts and relations organizing young people's CDL practices (RQ1 and 2), and the implications of all this for pedagogical practices (RQ3).

Regardless of the specific conclusions that student and educator participants uncovered, by engaging an IE approach to this research, the focuses that students pursued for their cellphone film inquiries went beyond exploring what they engage with on their devices and looked into the

devices themselves and how they exist in the world. Students' investigations embraced an understanding of critical literacy that focuses on the social relations and formal features of literacy events just as seriously as the content communicated through them. A critical approach to engaging with a digital text is only possible because of the formal relations bound up in a text's material existence, including its history. It is therefore foundational to investigate the world through which a screen comes into a young person's hand or lap and through which it gains particular meanings and coordinating potential. Building on the question of how student experiences may be coordinated by digital technology use and the connected texts, participants complicated the direction of the coorderings of people and digital tools, uncovering the many directions by which people's experiences and texts are co-constitutive: technologies organize students' experiences, students organize one another's experiences with technologies, their parents and educators co-organize students' experiences with technologies, and so on. For students to develop CDL practices that can help them navigate the relations that result in their shared experiences of digital tools, it is just as important that they learn about the complexities of the internet and their devices as it is that they learn about the complex net of relations involved in organizing their experiences with digital texts and technologies. By investigating the textually mediated social relations that orient students' technology use collaboratively, they were able to understand how to navigate digital spaces more critically as individuals and how to transform the relations mediating their technological experiences by participating in them more actively. Uncovering with students how their experiences with digital tools are socially organized enables their individual dexterity in maneuvering this social organization while exposing digital structures or systems that orient users in particular, impersonal ways that some experience as problematic.

In Chapter 6, I discussed how students were most comfortable and confident in their capacity to engage CDL practices when supported to navigate digital relations but also given autonomy within these supports (i.e., not taking away students' digital decision-making powers but supplementing them with support from parents, educators, and proactive strategies involving devices themselves). Welsh and Rajah (2014) wrote, "[t]he institutional ethnographer's task is to discover these various relations and trace them out so that people can see how their lives and activities operate in concert with those of others (Grahame, 1998)" (p. 336). And as DeVault (2006) adds, this "approach is meant to offer the kind of 'map' that could help those working politically to see what they are up against and where they might want to apply pressure" (p. 295). In the case of my research, answering this first research question from an IE approach was not always about organizing towards explicitly political actions, but supporting participants to take charge of their place in the shared relations ruling their digital lives at school or at home in more active and conscientious ways.

***Question 2: How do students understand the interconnections between their use of the internet or digital devices and their well-being or the well-being of the planet (i.e., wellness, learning, and connection to issues of social or environmental justice)?***

In the lives of the students I was working with – where complex digital tools have become ubiquitous and intertwined with students' educational and social experiences – I believe there is a lot of value in heeding Leander and Burriss (2020)'s call to support the development of CDL practices where student "agents can leverage computational machines and processes to become more ethical assemblages with them" (p. 13). However, when I first joined the students in their classroom, it was hard for me to tap into this potential. Students did not seem to understand very much about the ways their digital lives related to the critical topics about which

I was asking them questions. Fortunately, as they became more comfortable with me and as we developed a common language to discuss these concerns, it became clear that they were brimming with insights and opinions on how their experiences online or on their devices related to their well-being, the environment, data practices, and marginalized communities. Often students saw their impacts as individuals without noticing the ways they were similarly enmeshed in relations that moderated their uses of digital tools along particular slopes (Drulhe, 2012). This research project provided explicit opportunities for students to make those connections (in class activities and focus groups), and also to exercise their power within those relations (through cellphone films and collaborative discussions). Students found ways to resist the digital slopes set out for them by others; with support from their educators and from me, students were able to develop a more critical understanding of and engagement with digital literacy practices. After watching all the students' cellphone films, I felt more hopeful that students were not taking their phones or devices for granted, or at least that they were considering how to use them more critically towards ends that they found personally meaningful.

There were times throughout my research where students shared feelings of hopelessness or impotence trying to *talk back* to the seemingly objectified ruling relations that organize their digital engagements along economically motivated lines that do not always resonate with them. I am thinking of two conversations in particular: one where Louis asserted that avoiding online tracking is not always possible (Chapter 6) and another where Sam claimed that the oppressive pressures faced by women in our society is "never going to change" (Chapter 7). Listening back to my focus groups with these students, I feel like I was being too positive in a way that may not have always honoured their standpoints. In my eagerness to support them to develop CDL practices that might allow them to engage with the "forces standing over against them and

overpowering their lives" (D. E. Smith, 1987, p. 133), I may have failed to make space for students' grief or frustration over the difficulty of involving themselves in these relations – especially in regimes organized by the monopoly-like and opaque world of big tech. I should have made it clearer to students that they are right about the challenges they face in developing CDL practices, and, in any case, it is very difficult for average internet users and technology workers to overcome the exploitative or manipulative orientations facilitated by digital texts.

Reflecting back, I believe that I could have made space for students' negativity while also promoting the idea that hopefulness is more likely to motivate learning and action than hopelessness. Students and educators can and do impact one another and the world. Making even small changes to the digital realities experienced within our school communities and social groups matters. And these changes can be facilitated through developing and acting on more informed understandings of the social relations organizing students' and educators' everyday experiences online and with digital texts – building students' CDL practices. In order to get to a place of hopefulness that can facilitate these educational experiences, I need to make more space for students' embodied experiences of cynicism and/or despair.

***Question 3: How might pedagogical practices, and the structures that mediate them (i.e., curriculum, school policies, learning management systems, students' support networks, etc.) influence or change students' digital engagements and dispositions?***

Curriculum, policies, and infrastructure that relates to digital technologies play a significant role in the ways that teaching and learning happened at the school I partnered with for my research. These practices and structures need to change for our dynamic communities, and they *are* changing. As the emergency measures that were put in place during the COVID-19 Pandemic are reconsidered, we find ourselves at a crucial point for education. A critical approach

to figuring out how to incorporate (or not) new digital texts, tools, and structures into educators' pedagogical practices relies on ensuring that the people organizing educational spaces consider marginalized perspectives, allow students to assert control in their online lives, and promote an ethical relation to well-being and the environment. Developing pedagogical practices and structures that support deepening students' CDL practices will look different in different classrooms, in response to different students' experiences, relationships, and concerns.

This research project modelled one approach to inquiry that explicitly investigated digital technologies while using these tools. Cellphone films – or any DPVM – are particularly relevant to students because they involve mediating texts that are such a big part of their lives, in and out of school. Engaging digital tools in participatory, arts-based ways addresses the conventional literacy and digital literacy competencies of making meaning from and creating meaning with texts (both in theoretical and applied ways) while adding a critical dimension of illuminating how students can participate with texts in order to navigate and even change the reflexively organized and unfolding relations coordinating their social and technological lives. DPVMs like cellphone films are especially fitting for an IE approach that aims to be "personalised" (Mitchell et al., 2016, p. 30) and start with participants from their standpoints. Because students were already socially engaged on and familiar with the cellphones that we used as research tools (more familiar even than me, the researcher), this helped ensure that the research and lessons were participant- or student-centred, and that the CDL practices they developed were personally relevant, socially engaged, and empowering.

Within the scope of my research, the main way that I observed pedagogical practices and structures impacting student learning related to participants gaining knowledge about the critical dimensions of digital literacy practices. As Smith (2005) introduced in her formulations of IE,

awareness can be the first step towards change. Students and educators can become more responsible in their relationships to digital texts as they learn about and change their relationships with: personalized search results, online sources, digital notifications, predictive ads, device overuse, shifting conventions around digital/analogue approaches to school assignments, options for accessing feedback from teachers, the labour and environmental repercussions of digital technologies, and the list goes on and changes – based on what each particular group of participants experience, care about, and uncover. As digital practices continue to transform, what it might look like to work towards more critical engagements with digital tools in context-specific ways continues to change too. Furthering relevant research and educational efforts will be vital to the never-ending challenges and joys of supporting students and educators to develop their CDL practices in meaningful ways.

**Replacing the Displaced: Behind the Scenes, Behind the Screens**

IE is a sociology that can help researchers and their participants trace and understand the ruling relations of various institutional arenas. IE uses the concept of *texts* to:

> [draw] the researcher's attention to material media that carry messages, images, and sounds, using technologies that displace the presence of whoever made them. Recognizing these ethnographically, that is, as they actually enter into actively coordinating people's doings, has proven essential to developing ethnographies of institutional and organizations relations (D. E. Smith & Griffith, 2022, p. 31).

My approach to IE investigated digital tools themselves as coordinating texts, as well as inquiring specifically about the digital texts that are circulated through these tools: conventional media and social media posts, communications from school, notifications, messages, photos, videos, etc. By thinking of digital tools as texts, they become more legible ethnographically as

actively coordinating people's doings. And more importantly, as texts under investigation, researchers and participants can ask questions that reveal more clearly how digital nominalizations are standing in for the people who create the texts – devices, apps, and content – or the people – my research participants included – who "use, play with, break with, and oppose them" (D. E. Smith, 1990, p. 204).

In an IE that aims to uncover insights about using digital technologies more ethically, it is imperative to replace (i.e., understand) the displaced subjects of digital texts – both my participants themselves and the other people involved in students' digital practices. Without understanding how they are impacted by and impacting digital products and processes, students cannot act conscientiously in relation to others, or effectively in relation to their own needs, desires, and commitments. To that end, CDL education relies on demystifying digital processes, even if they have so-called artificial intelligence. The critical dimensions of digital literacy practices can be revealed by thinking about the internet or digital technologies within their material (even when virtual) embodiments: texts and tools as an interconnected web of technicians, designers, executives, educators, parents, peers... *No, the* internet *did not tell you something, nor did your* phone. When we find ourselves blaming technology, we have to remember there are people involved behind our screens, and we are the people behind the screens of others.

In my findings, I explained that in the early days of my field work, many of the students I spoke with told me that they believed themselves to be in complete control of the ways they used the internet and their devices. However, as we started discussing what it might mean to have control, we began uncovering the roles that other people play in participants' experiences navigating digital tools. Ironically, once students began acknowledging how they struggled to

control their digital lives – telling me about how their parents, educators, friends, and the devices themselves co-constitute their digital experiences and agency online (both in concert with others and struggling against them) – I felt more confident that they would be able to play an active and conscientious role in relations orienting their digital and online worlds. It was as if students gained control by considering ways in which they lacked it – investigating how ruling relations are objectified in order to play more of an active role in shaping them. All I had to do was awaken the knowledge they had available to them all along.

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