Digital Citizenship Toolkit

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Introduction

Hello and welcome to the *Digital Citizenship Toolkit*.

Have you ever wondered if your phone is listening to you? Do you ever look to the Internet for the answer to a question, and hours later, find that you are more confused than before? Have you argued with a friend or relative about a meme? Have you been tempted to share your own thoughts and feelings online, but resisted for fear of trolls? This book provides the answers to these questions and more.

Finding What You're Looking For

If you spend any time at all plugged into the digital realm, whether through social media apps, streaming services, or websites, it's easy to become overwhelmed by the sheer volume of content that exists – you can scroll all you want, but you'll never reach the end of the Internet.

All of that content, from the silliest YouTube video to the most serious news reports, has to be critically evaluated by you, the viewer. When you engage with the digital world, are you able to find the answers to your questions? When there are a thousand different responses to the same event, how do you know who to trust? Can you identify whose voice is missing? These are some of the components that make up digital literacy, the topic of **Chapter 1**.

Same As It Ever Was

It can feel like every day there's a new factor to take into account

when engaging with digital technology, from identity theft to facial recognition technology, election hacking to government censorship.

As much as the digital world feels very different than anything that has existed before, we can also learn a lot from the past. In **Chapter 2**, we examine modes of communication through history. For each new form of media that has been invented, there have been positive and negative impacts on society. How has knowledge spread around the world? What role did the printing press (and later, television and Twitter) play in revolution? How have governments and corporations sought to control access to the means to produce and share information?

Protecting Yourself Online

It's become an increasingly common practice to cover the webcam of computers with a sticky note, with the idea that at any time the camera could be watching. In **Chapter 3**, we examine how our devices track us through things like cookies, permissions, and device fingerprinting. We also look at ways to protect your privacy and security online, helping you decode the terms of service for your apps and devices, and learn to encrypt your communication and strengthen your passwords.

What we say online can have many real world consequences, good and bad. Cleverly curated Instagram accounts, hilarious blogs, and well-made YouTube videos have gotten their creators sponsorships, record deals, and publishing contracts. Tasteless jokes on Twitter and offensive posts on Facebook have caused some people to lose their jobs or get kicked out of school. Looking to join the conversation online? We provide an introduction to concepts like defamation, slander, and libel. We also review harassment and cyberbullying and how to protect your mental health when engaging online.

Whose Voices Are Heard?

When you do a search on the Internet, you might receive millions of hits. While it can often seem like all the information that has ever existed can be found online, there are in fact many gaps and omissions. In **Chapter 4**, we explore whose voices are heard online and whose are ignored or silenced.

When you find a piece of information online, how do you determine the context for that information? What viewpoint is being represented? Is there a dominant worldview that is being used to exclude other minority opinions? Are you more likely to accept something as true if it aligns with what you already believe? Do you understand the systems that underlie the search results you see? How does geography, race, gender, economic status and other factors impact the access to information? If "knowledge is power," how can we begin to ensure power is distributed more equitably?

Breaking Open the Black Box

A search engine like Google is considered a black box, meaning that the ways in which it works are not visible to the user. We don't know really know how it generates a list of results to a search query or how they are ranked. Because of that, it's even more imperative that we think about the ways in which we evaluate the information that search engines provide. In **Chapter 5** we review what we do know about how Google and its competitors function, with explanations of concepts such as spiders, crawlers, and search engine optimization. We also provide a fact-checking toolkit for evaluating the pages returned in search results. Learn how to check who owns a domain name, execute reverse image searches, and verify the accuracy of claims.

Chapter 6

TK

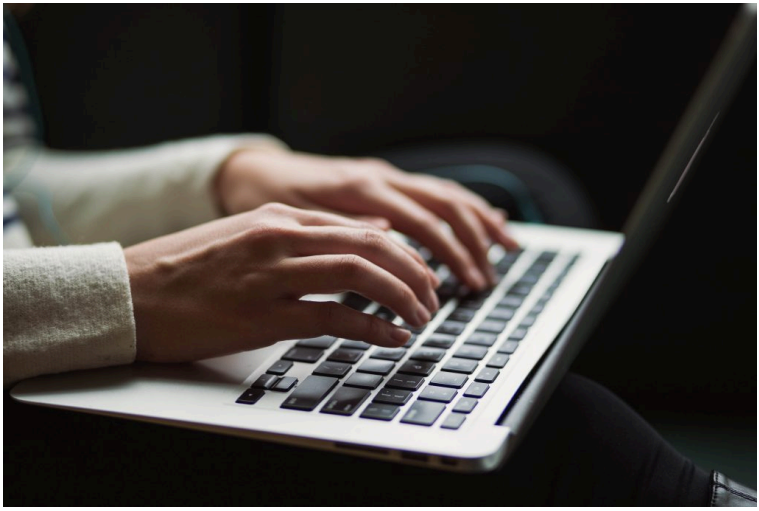
Stepping into a Scholarly Conversation

The goal for this book is not just to help you become a better consumer of information, but to empower you to take an active role online. How can you shape the conversation? What do you have to contribute and where? In **Chapter 7**, we take you through finding a space to participate to becoming confident in sharing your opinions with a larger audience.

By the end of this book you will have learned how to find and evaluate information, think critically about the production of digital content, protect your privacy and your digital identity, and finally become an active and responsible participant in conversations online – all the skills necessary to being a good digital citizen. We hope you enjoy!

Chapter 1: Introduction to Digital Literacy

CHERYL BROWN



Overview

In this chapter, you will be introduced to the concept of **digital literacy** and what new skills are needed in order to engage with the digital world responsibly and effectively. Drawing on your own digital experiences you will think about your digital literacy and digital footprint, developing positive strategies to proactively take control of your own digital identity.

Chapter Topics

1. Introduction
2. Taking Stock of Your Digital self
3. What is Digital Literacy?
4. Why is Digital Literacy Important?
5. Improving Your Digital Literacy: Becoming a Digital Citizen

Learning Objectives

After completing this chapter you should be able to:

- Describe the ways you use technology in your personal life and for learning
- Compare the different ways digital literacy has been referred to by scholars
- Examine how digital literacy differs between people based on the context in which they live and learn and the way they use technology
- Use a basic framework to assess your own digital literacy
- Reflect on your digital footprint
- Develop strategies to control your own digital identity

Introduction

As digital technology has become more common, affordable, and portable, more and more people from all parts of society are starting to increase their online and digital participation. Understanding the new opportunities, rules, and potential pitfalls of the digital world doesn't necessarily come automatically with long-term use. Not everyone using digital technology knows how to handle the range of available tools to their best extent, and even experienced digital technology users can fall prey to hackers, lose control of how they are represented online, or otherwise fail to maintain their digital identity in an optimal manner.

Digital literacy is a relatively new concept that emerged in the 1990s during the era of the Internet revolution. Before that, people talked more about "computer literacy." But in 1997, Paul Gilster, a historian and educator first coined the term "digital literacy," arguing that digital literacy went beyond just skills in using technology. He said it is about "mastering ideas, not [computer] keystrokes" (Gilster, 1997, p. 1).

Gilster (1997) further defined digital literacy as "the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers" (p. 1). For him, digital literacy involves the ability to critically evaluate information (presented in different formats) and make decisions about how to use this information in different real-life contexts.

By the end of this chapter you will be able to define the concept of digital literacy and its many different components, reflect on your own digital literacy, engage with the digital world responsibly, and be empowered as a digital citizen capable of helping others learn and develop their role in the digital world.

Taking Stock of Your Digital Self

You probably already use a range of technologies and digital tools in different aspects of your life. You might use mobile technologies, like a phone or tablet, to download materials or information from the Internet, or you may use them to communicate with friends and family. You may use information and communication technologies (ICT) mainly for work or for learning, or you might use it primarily for entertainment. In reality, people often use different technologies and tools for a mixture of purposes.

Activity 1.1: Thinking About Your Digital Self

Think about all the ways you use technology in your personal life (e.g. for entertainment, shopping, sharing photos, communicating with people, etc). Who do you interact with digitally, and how do you do this (i.e., what applications/websites do you use and for which purpose)? Now think about yourself as a student and the ways you use technology for learning?

Make a list or draw a diagram of your activities, noting the groups or networks you interact with digitally and thinking about how you use digital technology in the various spheres of your life.

You might like to try doing this digitally using this editable mind map about digital footprints on creatly.com or by making a drawing of your digital self on paper.

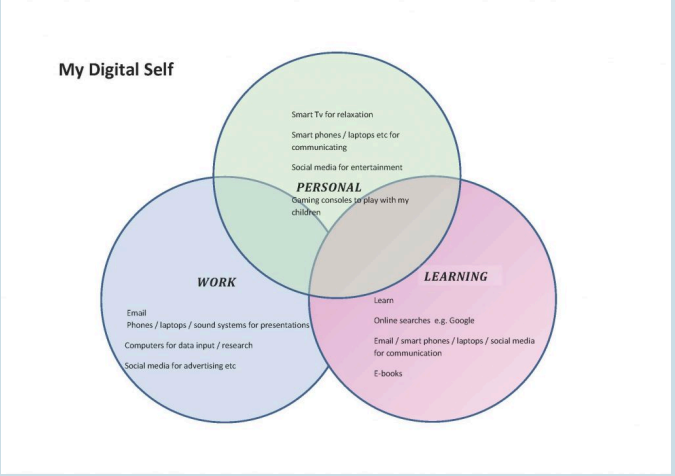


Figure 1.1: My digital self example

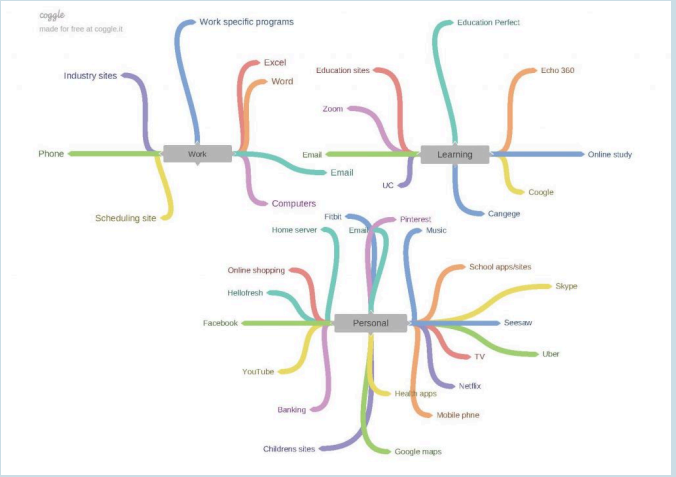


Figure 1.2: My digital self example

What is Digital Literacy?

The Concept of Literacy

Let's first start with "What is literacy?" Dictionaries define literacy as the ability to read and write. Within education, literacy is understood as the ability to read, write, and use arithmetic; the emphasis is on proficiency with language and numeracy.

It is important to pause and note that the term literacy has always held a degree of status. Globally, countries are often ranked in terms of literacy rates, compared by what percent of the adult population

can read and write, for example. There is more complexity to the terms literate or illiterate, however, and a lot depends on context. "New literacy studies" view literacy as a situated practice; as in it all depends on where you come from and what your purpose is.

Activity 1.2: How is literacy depicted on the Internet?

Use a common search engine like Google and type the term "literacy" into the search bar. Select the option to view the results as images and scroll through the visual depictions of literacy. What do these images depict about the concept of literacy?

Much of what you find in your search will probably suggest a relationship between literacy and words. This may be attributed to the fact that the concept has traditionally been associated with language—i.e., alphabetic literacy. In popular use, the word literacy has increasingly become a synonym for skill, competence, and proficiency—for example, emotional literacy and spiritual literacy, etc.

Whatever your view of the word literacy, what is less questioned is the relationship between literacy and technology. Until quite recently, literacy has, for the most part, been associated with print technology. The increasingly important role that digital technology has taken in shaping our world has led to another defining moment in the evolution of literacy.

The Concept of Digital

So what is digital? When you thought about your **digital self** in Activity 1.1, you probably thought about the digital tools and technologies that are available to you. For example: "Oh, I use text messaging on my cell phone to communicate with friends." Or: "I use email at university on my laptop or in the computer lab to communicate with faculty." But the digital part (just like literacy) depends on context. The technology that you use and may even take for granted is not the same technology that your grandparents use or that students in another country use. This is why the concept of digital literacy is more often now referred to as *digital literacies* as a plural, acknowledging the variability of what is both available and relevant.

Digital Literacy

Since the pioneering introduction of computers into education in the 1960s, four key concepts that have dominated the literature on literacies related to digital technology include: information literacy, media literacy, computer literacy, and digital literacy (Brown, Czerniewicz, Huang & Mayisela, 2016). These four literacies are not competing, but in fact are necessary components of what it means to be literate in the twenty-first century. The table below presents an outline of the different terms and how they intersect:

Table 1.1: Summary of Key Concepts (adapted from Brown et al., 2016, CC-BY-SA)

	Information Literacy	Media Literacy	Computer Literacy	Digital Literacy
Definition	the ability to locate, identify, retrieve, process and use digital information optimally (UNESCO, 2011)	the ability to access the media, to understand and to critically evaluate different aspects of the media and media content, and to create communications in a variety of contexts (European Commission, 2007)	a set of user skills that enable active participation in a society where services and cultural offerings are computer supported and distributed on the Internet (UNESCO, 2011)	those capabilities which fit an individual for living, learning and working in a digital society (JISC, 2015)
Primary Focus	information retrieval and assessment of quality	evaluation and production of media texts	skills in the use of computer-related technology	innovation, collaboration, lifelong learning

The concept of digital literacy only started to gain attention in the last decade. Initially digital literacy was viewed primarily as the functional skills and competencies that people needed in order to use computers and the Internet. However in the last decade this has been expanded to consider the broader capacity needed to participate in a digital environment. UNESCO (2011) views digital literacy as a life skill that not only increases employability, but serves as a catalyst that "enables the acquisition of other important life skills" (p. 1).

The view of digital literacy offered by Jisc (2015) is even more comprehensive, defining digital literacy as "the capabilities which fit someone for living, learning and working in a digital society" (para. 3). The capabilities outlined by Jisc:

- information, media, data literacy (critical use);

- digital creation, scholarship and innovation (creative production);
- digital communication, collaboration and participation (participating);
- digital learning and personal/professional development (learning); and
- digital identity and wellbeing (self-actualising).

(JISC, 2015)

Beyond functional and critical skills, the definitions and **digital capabilities** identified here propose a particular mindset, a way of being. In particular, the last three capabilities outlined—the abilities to engage in participatory culture, to be a lifelong learner, and to manage a professional digital identity—render digital literacy remarkably different from the initial views of digital literacy simply as mastery of technical skills.

Why is Digital Literacy Important?

You might be familiar with the concept of a "**digital native**" or the "**net generation**." These terms refer to the idea that a person who has been born or brought up during the age of digital technology will be familiar with computers and the Internet from an early age.

Activity 1.3: Generational View of Digital Natives

There are many cartoons online that comment on the amusing side of this concept. Do a search on Google (or

your favourite search engine) for "digital native" a cartoon. You might see images of kids looking at a book with shock and asking each other, "Where is the 'on' button?" Or you might see a child returning home from school walking right past their parent exclaiming, "How do you think it was? They didn't even have Wi-Fi!"

In fact, this generational desire to be constantly connected has even been inserted into Maslow's hierarchy of needs as the ultimate foundation of basic human needs. This psychological model is depicted as a pyramid with people's basic survival needs as its foundation which need to be satisfied before people can realise their full potential (Figure 1.3).



Figure 1.3: People's basic survival needs depicted as a pyramid.

However, there has been a lot of criticism about the concept of the digital native because it assumes many things, not least that somehow all young people have access to technology, that older people don't have the same level of digital literacy as younger people, and that having access to technology automatically means you know how to use it.

So if young people are so adept at using digital technologies, why do they (and perhaps you for that matter) need to improve their digital literacy?

There are many answers, and hopefully this introduction has already hinted at some of them. One is that it's not enough in this globally connected world to just be able to use technology. You need to be able to develop socially responsible digital practices and also to contribute to digital practices in your own personal, work, and learning lives.

One way of visualizing this is Sharpe and Beetham's (2010) digital literacy development model (see Figure 1.4).



Figure 1.4: Sharpe and Beetham's 'pyramid model' of digital literacy development model (2010). Reproduced with permission of the authors.

The pyramid represents a cyclical process for developing digital literacy skills. At the base of the pyramid is awareness of technology and access to it. However, just because you have a piece of hardware or software doesn't mean you have the ability to use it effectively. As you spend more time using technology, you become more confident in your technical, information, communication, and learning skills. You can then begin to apply those skills to make informed decisions and choices about how to use different technologies. As you move through the cycle, your experiences and practices contribute to the formation of your digital identity, while your identity informs your practices and drives the creative and appropriate use of technology.

Improving Your Digital Literacy: Becoming a Digital Citizen

This book is aimed at helping you develop your digital literacy in a range of areas in order to become a digital citizen.

Activity 1.4: How digitally literate are you?

Why not take stock of where you are right now. How digitally literate are you, and do you know what that means?

Download this model of the digital literacy development framework and complete it while thinking about your access, skills, practices and identities. This will help you

take stock of where you are now and help you focus on where you want to develop.

Explore Your Digital Identity

Digital identity refers to your "online self," the side of you that people see on the Internet. We all have different identities in different contexts and one of the things about being a digital citizen is the ability to control the representation of yourself in the online environment.

Activity 1.5: How do others see you online?

Search for references to yourself on the Internet by looking up your name using your preferred search engine. What do you have to type in to find the "real you" and not either someone else with the same name or a one-dimensional representation of you? Is this an accurate representation of who you are, what your interests are, what you find interesting, and what you share with others online?

Once you've reviewed your search results, have a look at this TedX talk "What Do Your Digital Footprints Say About

You?" by digital education and social media expert Nicola Osbourne.

Were you happy with the results of the search in Activity 1.5? Is there something you would like to change? One of the problems with information online is that once it is there, it is often very difficult to delete. Being aware of what you share online is a very important digital skill.

Using the image below (Figure 1.5), reflect on your **digital footprint**. Decide on some **SMART goals** (specific, measurable, attainable, relevant, and time-bound), and identify how you want the virtual "you" to look to the various people who might see you online: friends, family (including your grandmother!), teachers and professors, coaches, neighbours, potential employers, potential dates, or complete strangers.

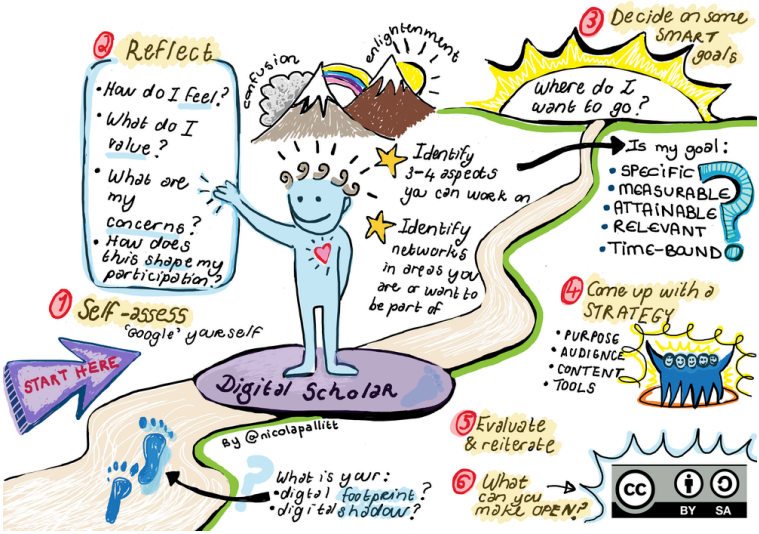


Figure 1.5: Reflecting on your digital identity

This book is aimed at helping you develop your digital literacy in a range of areas in order to become a better digital citizen. By the end of this book, you will be able to more effectively and responsibly:

- Engage in digital practices.
- Critically evaluate information, online interactions, and online tools.
- Manage and communicate information.
- Collaborate and share digital content.

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Chapter 2: Modes of Digital Communication

KELLY DERMODY



Overview

In this chapter, we look at how changes to the way we communicate can have profound effects on how we function as a society. We will examine the positive and negative impacts the printed book and "traditional" media like TV have had on society. Then we will discuss how the Internet has changed the way information is created and shared and what that means for society. Throughout the chapter, we will also look at who owns our communication tools and how they can impact us in good ways and bad.

Chapter Topics

1. Introduction
2. From Oral to Print Culture
3. How the Printing Press Changed Society
4. The Next Wave: Media Communication
5. Ownership of Information Before the Internet
6. Why the Internet is a Communication Revolution
7. Who Controls the Internet?
8. Conclusion: Becoming a Digital Citizen in the New World

Learning Objectives

After completing this chapter you should be able to:

- "[Explain] that different methods of information dissemination with different purposes are available for your use" (Association of College & Research Libraries [ACRL], 2015, p. 15).
- "Understand the increasingly social nature of our information ecosystem where authorities actively connect with one another and sources develop over time" (ACRL, 2015, p. 13).
- "Develop awareness of the importance of assessing content with a skeptical stance and with a self-awareness of your own biases and worldview" (ACRL, 2015, p. 13).
- "Understand how and why some individuals or

groups of individuals may be underrepresented or systematically marginalized within the systems that produce and disseminate information" (ACRL, 2015, p. 16).

Introduction

Thirty years ago, if you wanted to research a topic for a class assignment, you turned to printed books, multi-volume encyclopedias, and periodicals such as journals and newspapers. The only way to access these sources was a trip to the library. Sources like multi-volume encyclopedias were expensive, took a long time to produce, and quickly became out of date. After you found your resources, you either took notes on them at the library, or trudged home carrying heavy books to flip through later. Now, of course, a quick Google search on your phone from the comfort of your own bedroom will produce the books, newspapers, and journal articles you need for your assignment. Some will ask you to pay for access, but others (often through your library) are free.

The way we convey information to one another has evolved: from oral traditions to the printed book; from the first overseas telegraph to the Internet. When you look at the scenario above, you can see the impact of the Internet on your daily life as a student. In this chapter, you will see how each stage of the evolution in communications created a profound impact on personal life and on society as a whole. Before the Internet we were mainly consumers of information, now we can be the creators; before the Internet we had to wait long periods of time for updates and revisions, now information is updated frequently, sometimes within seconds. We invent something that changes our way of communicating, and it in

turn changes how we act as a society. Or as Marshall McLuhan said and J. M. Culkin (1967) summarized, "We shape our tools and then our tools shape us" (p. 70).

From Oral to Print Culture

As a student you have no doubt read a newspaper article, book, or possibly an academic article (either in hard copy or online) for a class assignment. Distilling important information onto stone tablets, scrolls, and eventually in printed books and journals has been the way certain societies have conveyed information for centuries. When you think about the information contained in the books and periodicals you have read, it has probably ranged from purely entertainment, like what you might read in some magazines, to an in-depth research paper with data that you read for class. This is thanks to publishing technology that allows us to produce mass numbers of periodicals and books each day.

Writing things down was our first revolution in communication. Before writing, our first form of communication, oral, allowed us to pass down our knowledge, art, ideas, and culture from one generation to another through speech or song. Our oral traditions are still evident when we listen to or read folk tales, ballads, chants, prose, or verses (Vansina, 1985). Oral traditions made it possible for a society to transmit oral history, oral literature, oral law, and other knowledge across generations without a writing system. When cultures started to write down their knowledge it changed the way society communicated.

Writing produces information in a static way such that it can be passed along to someone as nearby as our neighbour or as far away as across the ocean without the message changing and without the need to memorize it. The information in written works can be preserved and passed down for generations. Today, we can go to the library and find a book on psychology published in 1911 alongside

one published in 2017. With oral communication, you rely on a person and their memory for information, but with a writing culture, access to information is through a scroll or a book. While oral communities rely on elders or those designated to remember information, books allow readers to work independently to learn on their own.

Pause and Reflect

We have been programmed to believe that our print culture is superior to oral traditions. In university, we are told that only the information in research articles, written by professors, whose privileges have allowed them access to higher education, should be taken seriously. This western belief has had profound and violent consequences for indigenous societies colonized by western nations. Our beliefs still influence us today in how we treat indigenous knowledge. Only recently, have scientists started to realize their own prejudices and are working with elders to understand how indigenous knowledge of our ecology and climate can help us understand key issues like climate change. "For example, some climatology studies have incorporated Qaujimajatuqangit (Inuit traditional knowledge) to explain changes in sea ice conditions observed over many generations" (Nicholas, 2018, para. 6).

How the Printing Press Changed Society

In 1447, Johannes Gutenberg created a printing press in Mainz, Germany; this press revolutionized the way we communicate. Gutenberg's printing press was not the first machine to print books and pamphlets. In fact, Chinese monks were applying ink to wooden blocks and pressing them onto sheets of paper using a technique called block printing, about six hundred years before Gutenberg's printing press (Palermo, 2014). Gutenberg's invention, however, was an improvement on the presses that came before. His movable blocks of type (letters) were made of a mix of metals that proved to be the perfect combination, at that time, for mass printing books and pamphlets. Also, his invention came at a perfect time in Europe; literacy rates were on the rise and those with money were buying more and more books. Therefore, there was a commercial market for book production and this is why the printing press took off in Europe before other societies (Graff, 1987).

Books and pamphlets created before the printing press were handwritten, first on scrolls and then on parchment paper in handcrafted books. In Europe, the first bound books were written by monks in medieval monasteries. This meant books were mostly produced for religious institutions and only the wealthiest people in society could afford them for their own personal libraries (Eliot & Rose, 2007). Since the Catholic Church controlled the main production of books in this period, the Church's teachings dominated the types of books published and they were written in the language of the Church: Latin (Clanchy, 2007). In contrast to Europe during the same historical period, the Islamic empire gathered important hand-crafted Greek and Indian mathematical books and then translated and studied them, leading to a new era of scientific creativity from 800 to 1250 AD, hundreds of years before Europe's Scientific Revolution (Devlin, Sept. 5, 2002).

Before Gutenberg's press, literacy rates in print societies like Europe were very low and schooling was provided only for the boys

of the upper classes (Clanchy, 2007; Graff, 1987). For someone who wanted to write their own book, it was difficult and expensive to get access to paper, quills, and ink (Clanchy, 2007). Before the printing press, knowledge was controlled by religious or monarchical institutions that had the means to produce it (scribes), and access to knowledge was reserved for the elite of society who could afford access to education and the price of books.

The mass production of books and pamphlets is linked to profound changes in European history. The Church no longer owned the only means of producing information. More access to information for more people led to social and political movements that changed Western society:

- Detractors of the Catholic Church published their criticism in books, pamphlets, and posters. For the first time, Bibles were printed in large numbers for public consumption in local languages. Criticism of the Church spread throughout Europe at a faster rate thanks to the printing press and this led to the Protestant Reformation.
- Scientists and great thinkers were now able to publish their own studies, as access to paper, ink, and a printing press became affordable for those with wealth. This enabled the rise of the Enlightenment and the Scientific Revolution.
- Different political ideas spread, thanks to print, and influenced revolutions that led to the end of monarchical rule and to the rise of movements like democracy and communism in Europe and many other parts of the world.
- People began to produce pamphlets and newspapers, covering current events and influencing how people felt about politics and events. This was the beginning of the rise of journalism.
- Authors could write for pleasure, and new forms of writing took off: novels and cookbooks, etc.

Pause and Reflect

In *The Disappearance of Childhood* (1994), Neil Postman theorizes that the printing press in 1447 created the childhood we know today. In the medieval world, a child did not need to be able to read to work for a living, so children were expected to join the adult world of work as soon as they had mastered speech (around seven years old). The spread of books and literacy created the expectation that children should learn to read and write before they entered the adult world, thereby creating the longer childhood we know today where completing school is the marker of adulthood (Postman, 1994).

Of course in 1447, Gutenberg and his fellow citizens had no idea what far-reaching effects this new way of communicating would have on world history, just as we have no real idea how the Internet is affecting us. The effects of the printing press are still being felt today for better and for worse. Neil Postman (1994) calls this the "Frankenstein Syndrome," a situation in which technology is developed for a limited and specific purpose (p. 21). "But once the machine is built, we discover—sometimes to our horror, usually to our discomfort, always to our surprise—that it has ideas of its own" (Postman, 1994, p. 21). The print medium has given people the ability to widely share different opinions and theories; this has both positive and negative aspects. McLuhan (1967) said, "Print created national uniformity and government centralism, but also

individualism and opposition to government as such" (p. 235). Print is powerful. It can influence citizens to question their leaders and their own prejudices and it can lead to both violent and peaceful revolutions. So, as McLuhan pointed out, censorship of books and pamphlets soon became a powerful tool for governments to control what information citizens could read. Print has also been used by governments and other organizations to inflame hatred and bigotry against marginalized groups and "foreigners."

Recommended Viewing



A YouTube element has been excluded from this version of the text. You can view it online here:
https://pressbooks.library.ryerson.ca/digcit/?p=22

For more information on the role the printing press played in

European history, please see this video: https://youtu.be/krexVFFB77s (CC By video).

The Next Wave: Electronic-Media Communications

The next great revolution in communication came in 1843 with the telegraph, the first electronic messaging system. It used Morse code to send messages across wires laid between towns and even across oceans. By the mid-twentieth century, we had various electronic ways to communicate throughout the world: the telephone, movies, radio, and television (Naughton, p. 125).

As with the print revolution, the electronic-media revolution meant we had new ways to communicate. Like print, it affected how we act as a society. We could now convey emotion and powerful images to get our message across. In our living rooms we could see the true horror of war or famine and be prompted to do something about it. On the negative side, we were also bombarded with ads that influenced us to ask our parents to buy that new Barbie Dreamhouse.

Case Study: The Role of Media Coverage and the Civil Rights Movement

On April 16, 1963, Martin Luther King Jr. began writing his famous Letter from Birmingham Jail. King had been

arrested on April 12 during a peaceful protest for the repeal of the segregation laws. The letter was a response to eight white Alabama clergymen who had called King an "extremist" and had told the protesters to be patient and to wait for lawmakers to repeal the racist laws. King's letter explained the cornerstone of the civil rights movement: a strategy of non-violent resistance to racism. King pointed out that people have a moral responsibility to break unjust laws and to take direct action rather than waiting potentially forever for justice to come through the courts. The letter was immediately rejected for publication by the New York Times Magazine, and it was months before it was partially published in other newspapers and magazines. It was a year before it was published in its entirety—in King's 1964 book, Why We Can't Wait (Noah, January 9, 2013).

While getting King's words into print was a slow process, the civil rights movements had come alive in a time of wider dissemination of news media. As more and more peaceful protests were met with police violence, news media all over America began to cover the encounters. Images of police wielding water hoses and unleashing German shepherds on non-violent protesters were shown in living rooms across America. TV and media coverage were helping the movement spread its message to the rest of society and attracting followers from various backgrounds to the cause. Present-day congressman John Lewis, who when he was a young man was brutally attacked at the March on Selma, said, "The civil rights movement would have been like a bird without wings if it hadn't been for the news media" (Treadwell, 1987, para. 6).

Recommended Viewing

For more information on the role the news media played in the civil rights movement, please see this video: https://www.pbslearningmedia.org/resource/mr13.socst.us.selma/selma-alabama-the-role-of-news-media-in-the-civil-rights-movement/#.WpBTlxIrJBw.

Questions

1. What role did print and electronic media play in allowing a marginalized group to spread their message?
2. Think of current campaigns using social media. Would the civil rights movement play out differently today?

Ownership of Information Before the Internet

By the mid-twentieth century, information production was supported by large-scale infrastructure. Across the globe, people read newspapers, went to see blockbuster movies, and read bestselling books. Information had become a money-making commodity that could be bought and sold every day. By 1995 (when the Internet took off), large media conglomerates like News Corp, owned by Rupert Murdoch, owned newspapers from across the world. Powerful book publishing companies like HarperCollins (also

owned by Rupert Murdoch), decided who was published and whose works appeared in bookstores and libraries. Film and TV production were controlled by companies like MGM or NBC. To further emphasize the narrowing of ownership, 20th Century Fox was owned by … you guessed it, Rupert Murdoch–at least until 2013. The website for News Corp in New York can be found at https://newscorp.com.

The push to industrialize the production of information in the twentieth century meant information became part of what Yochai Benkler has called "the industrial information economy" (as cited in Naughton, 2014, p. 84). For the average citizen, writing up your ideas with a pen and paper, and making photocopies and posting them around town as flyers was still a way to communicate your opinion, and maybe you could get access to airtime at your local community TV station, but overall, information was produced and disseminated by large corporations. While freedom of the press and alternative and independent printing houses meant that dissent and new ideas still emerged, there was an air of closed professionalism when it came to traditional print and media (Naughton, 2014).

Why the Internet Represents a Communications Revolution

Activity: 2.1: Take the Quiz

1. How many digital devices do you own that allow you to access the Internet?
2. How often do you post something to a platform

where more than ten people can see it?

You will likely notice that you own more than one device connected to the Internet and spend hours creating and posting work or comments for dozens if not hundreds or thousands of people to see. Just like the people of Johannes Gutenberg's time, we are living in the midst of something new and if we reflect on it, we can see that it is changing not only the way we communicate, but also the way we function as a global society. The perfect combination of the arrival of both the affordable personal computer and the opening of the Internet to the public in the 1990s created the current communications revolution.

In technical terms, according to InternetSociety.org, "The . . . internet consists of tens of thousands of interconnected networks run by service providers, individual companies, universities, governments, and others. Open standards enable this network of networks to communicate. This makes it possible for anyone to create content, offer services, and sell products without requiring permission from a central authority" (Internet Society, n.d., para. 1). Thanks to open standards, the Internet is not owned by one global company. The Internet is a carrier of information in the forms of websites, email, files, videos, VoIPs, and files yet to be invented (Naughton, 2014; Leiner et al., 1997). The Internet has facilitated a revolution in how we communicate because it allows information to be stored, created, and distributed to large numbers of people, across the world, in a matter of seconds. Or to put it another way, billions of pieces of information, including the digital artifacts of our human history, plus our own creations, can now be accessed at the touch of our fingers.

In thirty short years, the Internet has become, for many, as commonplace as electricity and running water. The Internet is a

truly global revolution in communications, but access is still limited in developing countries and in some rural and poorer areas. In 2017, according to the International Telecommunication Union (ITU) (2015), the United Nations special agency for information and communication technologies (ICTs) stated that 51% of the world's population had Internet access and 89 million users were from least developed countries. However, "only 15% of households in [least developed countries had] Internet access at home. In these countries, many [people were] accessing the Internet from work, schools and universities, or other shared public connections outside the home" (ITU, 2017, p.2). According to another survey, of thirty-eight countries, by the Pew Research Center, the majority of citizens polled consider free expression in cyberspace, without government control, to be a fundamental right (Wike, 2016).

The Internet, like the printing press, is an example of what Professor Clayton Christensen (2003) called disruptive technology. Christensen was primarily concerned with how a new technology can significantly alter the way that businesses or entire industries operate. Just like companies, society is also forced to alter the way it acts. We can already see a few disruptive changes the Internet has made to the way we communicate:

- Global spread of information quickly and for little cost. Information now spreads faster and wider for little cost.
    - Using Twitter, "a celebrity . . . can flash a message to . . . 6.3 million followers" in seconds (Naughton, 2014, p. 131). Thanks to email and instant messaging, we no longer rely on the phone or snail mail to relay messages at work or to loved ones across the world. There is a downside to this quick spread of information: not all information is worth sharing (think of racist posts, bullying, and fake news). We are also entering into what social scientists call social bubbles where we filter out views we don't like (Alvermann, 2017). You will learn more about this in chapter 5.

- Reliance on the Internet. We no longer seek out traditional sources to quickly find information.
    - An entire generation of children have now grown up knowing that a quick query to a search engine will always produce an answer, or multiple answers (Halavais, 2009). Access to education is easier as we can teach ourselves without a trip to the library, simply by using online resources like videos found on YouTube and at the Khan Academy.
- Reliance on the Internet for information is disrupting traditional forms of relationships, like asking our friends or seeking out experts in our local community.
    - As we will see in chapter 5 we also need to be able to critically evaluate what we read on the Internet. Dr. Google is always quick to give you a terminal diagnosis for your headache, but this may not be an accurate response to your actual situation—and may cause you to worry unnecessarily or to take inappropriate or even dangerous action
- We broadcast ourselves. Everyone can be a producer of information and production cost is low (Naughton, 2014).
    - The Internet allows us to create and upload thousands of pictures, videos, and pieces of information every day. This has resulted in what Clay Shirky has called the "mass amateurization of publishing" (as cited in Naughton, 2014, p. 130) or what Yochai Benkler has called "social production" (as cited in Naughton, 2014, p. 85).
- E-commerce. We now shop online for everything from airline tickets to groceries.
    - Thanks to various cyber-security features, we give our credit card number to online stores like Amazon and feel our financial information is safe (ish). Shopping online is a great example of how disruptive the Internet can be. "Bricks and mortar" stores have recorded profit losses in

direct correlation with the rise of e-commerce (Niemeier, Zocchi, & Catena, 2013). Anyone remember video stores? Online videos and streaming services like Netflix made them obsolete and so what was once a familiar store fifteen years ago is now non-existent for this generation.

Who Controls the Internet?

From the very beginning, the Internet ran on the revolutionary principles of neutrality and openness. Of course, to connect to the Internet, we need to pay an Internet service provider (ISP), so accessing the Internet has never been free. But net neutrality means that once you are online, you can access any website, upload your own works, and participate in any social media platform of your choice. You may need to pay for apps or memberships, but with neutrality, it is your right to choose, for instance, between Netflix and any other streaming service. The idea of openness has created a "sharing culture" on the Internet, which we see in tutorials on YouTube as well as in the sharing of open source software solutions (Naughton, 2014).

This unlimited access to different websites and a culture of sharing is what made the Internet an e-commerce revolution and has led to new business ideas like Amazon (Niemeier et al., 2013). It has also created platforms for people to express their views and for other people to learn about these views. Important social movements and even political revolutions are now played out online.

While neutrality and openness sound utopian, the reality is that the Internet is in a constant battle with larger forces who want to control it and censor its content. The concept of net neutrality is currently under review in many countries like the United States (see "Fight: The Wired Guide to Net Neutrality"). Censorship of content is controlled by the government on a country-by-country basis.

While most democratic countries have only moderate Internet censorship, other countries go so far as to limit the access of information such as news and to suppress discussion among citizens (Murdoch & Roberts, 2013). Internet censorship also occurs in response to or in anticipation of events such as elections, protests, and riots.

Case Study: The Role of Social Media and the Tunisia Revolution

On December 17, 2010, demonstrations erupted in Tunisia. A few weeks earlier the website WikiLeaks had released classified information from the US diplomatic service around the world, making it, according to WikiLeaks, "the largest set of confidential documents ever to be released into the public domain" (WikiLeaks, 2011, para. 1). Included in the online documents was evidence of corruption against the Tunisian government of Zine al-Abidine Ben Ali, who had been in power since 1987. That day, a desperate act by an unemployed fruit seller was all the catalyst that was needed. The Tunisian people had finally had enough of corruption, high unemployment, and lack of political freedom, such as freedom of speech (Anderson, 2011). The Internet played a significant role in organizing the protests and demonstrations that followed, and in disseminating news and pictures to the rest of the world. Reporters and civilians on the ground used Twitter to send out up-to-the-minute reports. Protesters used Twitter and Facebook to organize and set the times and places for their demonstrations. They also used the two

social media platforms to warn one another about and to keep one another safe from the military and the police (Anderson, 2011).

Soon after the protests began, the government ramped up its attempts at controlling the Internet. These started simply enough with site blocking, but soon turned more sinister. Tunisia's Internet Agency started to harvest the passwords and usernames of bloggers, reporters, political activists, and protesters by injecting hidden JavaScript into the login pages of many popular sites, like Facebook (O'Brien, 2011). They then subsequently logged into these sites using the stolen credentials, and deleted the protesters' Facebook groups, pages, and accounts. They also used the information to arrest and jail those involved (O'Brien, 2011). The demonstrators prevailed anyway, and twenty-eight days later, on January 11, 2011, Ben Ali fled to Saudi Arabia. The successful revolution in Tunisia inspired what would become known as the "Arab Spring," a revolutionary wave of both violent and non-violent demonstrations, protests, riots, coups, foreign interventions, and civil wars in North Africa and the Middle East. For the first time in history, social media and the Internet were key players in an uprising.

Questions

1. Marshall McLuhan (1967) said of the print revolution that it "created national uniformity and government centralism, but also individualism and opposition to government as such" (p. 235). What role

does social media play in allowing opposition to the government but also in facilitating government centralization?

Conclusion: Becoming a Digital Citizen in the New World

We are living in a time of revolution in methods of communication. Using the Internet allows us to share our information and creations. It also provides a platform for the inclusion of both mainstream and marginal voices and it creates a space for us to participate within our chosen society (Mossberger, Tolbert, & McNeal, 2008). However, we need to act as informed citizens when using these new ways of communicating.

In the next chapters, you will learn how to conduct yourself as a digital citizen on the Internet. This means remaining critical of what you read and carefully considering how you conduct yourself online. As connected users we need to be aware that while sharing videos, images, and memes can give us instantaneous positive feelings, uncritical use of social media can also lead to poor decision-making and life-altering consequences (Alvermann, 2017).

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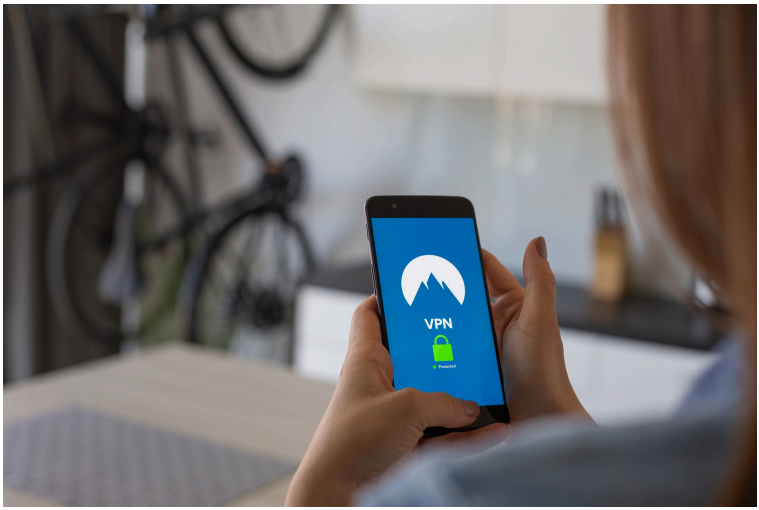
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Chapter 3: Understanding Digital Citizenship

JENNIFER PETERS, AGNIESZKA GORGON, CARMEN GELETTE, AND ALANA OTIS



Overview

Freedom of speech, digital addiction, cyberbullying, and privacy violations are all issues we may face on a daily basis. Could your review turn into a defamation suit? Are your apps spying on you? Are your devices affecting your health and wellness? Do you know what it takes to conduct yourself in a safe and respectful way in your online world? Find answers to these questions along with others in this chapter.

Chapter Topics

1. Introduction
2. Social Media
3. Privacy
4. Security
5. Defamation
6. Harassment
7. Health and Wellness

Learning Objectives

After completing this chapter, you should be able to:

- Identify the benefits and risks related to conducting online transactions.
- Select the appropriate tools, language, and behaviour to conduct positive online interaction and to avoid breaking federal and provincial laws.
- Recognize behaviours to protect and promote your online identity and so you don't compromise anyone else's online identity or presence.
- Predict the mental and physical consequences of overusing digital and online devices and services. Analyze your own use, recognize any negative patterns, and develop healthy online and digital habits.
- Demonstrate ways to maintain privacy and security

online.

Introduction

In this chapter, we will look at some considerations you should make when using social media, and the impact social media use can have on relationships and job searching. We will review how to protect your online privacy, including security threats from spam, phishing, malware, and hacking, as well as looking at the tracking capabilities of different apps and websites. Our behaviour online can have serious real-world consequences, and so this chapter will provide you with an introduction to defamation, slander, and libel, as well as with ways to identify online harassment, including cyberbullying, and what you can do if you are a victim. Finally, we will look at how you can examine your own digital habits in order to improve your physical and mental health.

Social Media

Social media is defined as a group of online communities where people communicate and share information and content. Popular examples of social media sites include Twitter, Facebook, Instagram, YouTube, and WhatsApp. According to a recent Angus Reid poll about 98% of Canadians between the ages of eighteen and thirty-four use social media at least occasionally (Angus Reid Institute, 2016).

We will review some considerations you should make when using social media for personal, educational, and professional use.

Your Digital Footprint

The information you share online can last a long time and may be seen by thousands of people all around the world.

The video below is a TEDx Talk in which the presenter delivers a spoken-word piece titled "Digital Footprints." The piece reflects on responsible use of social media and how decisions we make about the content we share online may have long-lasting consequences. The presenter, Michelle Clark, is a teacher and public speaker.

Digital Footprints (video)

(NOTE: Click the video transcript link below to download a Word version of the performance if you prefer to read the text rather than watch and listen to the video.)

Activity 3.1

In this activity, you will learn more about what you should or shouldn't post online.

Click here to try the activity: http://plato.algonquincollege.com/ac-library/lp/social-media/story_html5.html

Text only version: http://tlp-lpa.ca/ld.php?content_id=%2033945102

When Social Media Goes Wrong

Poorly thought out, inappropriate, or offensive messages on social media can have serious consequences. The article "How One Stupid Tweet Blew Up Justine Sacco's Life" focuses on the story of a public relations professional who sent out, on her personal account, a tweet that was interpreted as being racist and insensitive (Ronson, 2015). Despite having only 170 Twitter followers, within hours her tweet became the number one worldwide trend on Twitter and received tens of thousands of angry responses. Sacco lost her job, had employees of a hotel threaten to strike if she stayed there, and received criticism from her family. Months after the incident, after being limited in where she could find employment, she was still under scrutiny for her career choices. She even found it challenging to date as people would look her up online and see the negative and controversial things that had been written about her.

Modern stories of the consequences people face due to content on social media can be compared with the public punishments for crimes that took place in the eighteenth and nineteenth centuries in the United States. Ronson (2015) found that many people in these historical records felt that public punishments often went too far, with the crowds encouraging worse punishments than what may have been fair.

Full article: "How One Stupid Tweet Blew Up Justine Sacco's Life"

Losing Your Job Because of Social Media

In Canada people have lost their jobs because of content they posted on their personal social media accounts. Even comments made on your own time and meant only for your personal circle of friends and family members may put your career at risk.

People have been fired because of social media postings that

were or were seen to be: sexist, racist, anti-LGBTQ+, or prejudiced or offensive in other ways; posting about, participating in, or encouraging criminal activity; and posting bullying or harassing comments. More detailed accounts of these instances can be found in the article "14 Canadians Who Were Fired for Social Media Posts."

Social Media and Job Applications

An increasing number of employers are using social media to screen job applicants. While some content on public social media can harm your chances of being hired, other content may make you stand out as a potential asset for a company.

A poll by America poll CareerBuilder (2016) found that 60% of employers used social media sites to research job candidates. This number had increased from 52% in 2015 and 11% in 2006 (CareerBuilder, 2016). The same poll found that 59% use search engines like Google to research candidates (CareerBuilder, 2016), a number that is also increasing. Companies hiring for information technology and sales positions were the most likely to use social media to screen potential employees (CareerBuilder, 2016).

Instances where using social media can be good for your career: 41% of employers said they were less likely to give someone an interview if they couldn't find any information online about the person (CareerBuilder, 2016). Information found on social media that employers see as positive includes:

- Evidence of how the candidate's background fits the job qualifications.
- Evidence that the candidate's personality seems to be a good fit with the company's culture.
- Evidence of a wide range of interests.
- Evidence of great communication skills and a professional image.

Content or information on social media that may hurt your chance of being hired includes:

- Inappropriate or provocative pictures, videos, or comments.
- Evidence of drinking or using recreational drugs.
- Discriminatory comments.
- Negative or overly critical comments about previous employers or co-workers.
- Evidence of sub-par communication skills.

More detail about the survey's results can be found here: Number of Employers Using Social Media to Screen Candidates Has Increased 500 Percent over the Last Decade.

Social Media and Relationships

Social media can allow you to connect with others, both people you've met in person and people you meet online. It can have both positive and negative impacts on our romantic relationships, our friendships, and our relationships with family.

1. Social media can bring people together. In a 2015 Pew survey, 83% of teens using social media said it made them feel more informed about and connected with what is happening in their friends' lives. The same survey found that 94% of teens spend time with friends through social media.
2. It's good practice to ask permission before sharing a picture of someone else. In a Kaspersky Lab survey, 58% of people reported feeling upset or uncomfortable when a photo of them was shared that they didn't want made public.
3. While learning more about the lives of friends and family can be a positive thing, there is such a thing as too much information. According to the same Pew survey, 88% of teens

surveyed felt that people overshare information on social media.

4. Honesty is as important online as offline. While most millennials think online dating is a good way to meet people and that friendships can be formed online, many of them have reported feeling disappointed or misled when they discovered that friends or potential romantic partners hadn't represented themselves accurately online.
5. In the Pew survey, 77% of teens felt people were less authentic on social media compared to in person. However, in the same survey, 85% of teens agreed that people might show a different side of themselves online, and might feel more comfortable discussing serious topics on social media compared to in person.
6. Social media can provide a safe place for some teens to get support: 68% of teens surveyed in the Pew survey said they had asked for and received support through social media during difficult times in their lives.

Pew survey: Teens, Technology and Friendships: Chapter 4: Social Media and Friendships

Social Media Tips

Think carefully before you post. Anything you share online can stay there a long time, even after you delete it.

- Don't post anything you may regret later.
- Check your privacy settings.
- Your content may be visible to and shareable by more people than you realize. You'll learn more about privacy and settings in the privacy section of this chapter.
- Make a good first impression.

- Social media isn't just used by family and friends. Many employers are starting to use and monitor social media to screen job applicants.
- Consider your health.

Use of social media can have an impact on your mental, emotional, and physical health. You'll learn more about health and wellness later in this chapter.

Activity 3.2: Test Yourself

1. Have you ever posted something online that you later regretted? If you could go back and change that posting, what would you do differently?
2. How might social media benefit you in your career or personal relationships?
3. Are there consequences of not using social media at all?

Privacy

Whenever you interact with online content your activities are not entirely private. You leave a digital footprint when you access websites, search Google, or download and interact with apps. What kind of impact can this have on your life? Why should you care? This section will help you become more aware of issues around digital

privacy and will identify areas that might be of particular concern to you.

Activity 3.3: How Much Do You Already Know?

Before you continue reading, see how much you know about privacy by taking this quiz: Privacy Quiz developed by the Office of Privacy Commissioner of Canada.

Terms of Use and App Permissions

Let's face it, very few people read the "terms and conditions," or the "terms of use" agreements prior to installing an application (app). These agreements are legally binding, and clicking "I agree" may permit apps (the companies that own them) to access your: calendar, camera, contacts, location, microphone, phone, or storage, as well as details and information about your friends. While some applications require certain device permissions to support functionality–for example, your camera app will most likely need to access your phone's storage to save the photos and videos you capture–other permissions are questionable. Does a camera app really need access to your microphone? Think about the privacy implications of this decision.

When downloading an app, stop and consider:

- Have you read the app's terms of use?
- Do you know what you're giving the app permission to access?

(e.g., your camera, microphone, location information, contacts, etc.)
- Can you change the permissions you've given the app without affecting its functionality?
- Who gets access to the data collected through your use of the app, and how will it be used?
- What kind of privacy options does the app offer?

Download and review the checklist Privacy and Mobile Apps: Tips for Protecting Your Mobile Information When Downloading and Using Mobile Apps, developed by the Office of the Privacy Commissioner of Canada, to find tips on how to guard your privacy. Download the Terms of Service; Didn't Read browser add-on to get instant information about a website's privacy policies and terms-of-use agreements.

> Are you interested in learning more about app permissions and what they mean? Take a look at this GFCLearnFree video tutorial.

Cookies and Tracking

Have you ever considered why products you searched for on Amazon show up in your Facebook feed, pop up in your Google search results, or appear on YouTube in advertisements? Cookies—small pieces of data with a unique ID placed on your device by websites—are online tracking tools that enable this to happen. Cookies can store your website-specific browsing behaviour and any site-specific customization (for example, your location preferences), as well as keep track of items added to a cart on online

shopping sites, such as Amazon. In addition, they can track your purchases, content you've viewed, and your clicking behaviour.

The biggest concern with cookies is that they enable targeted online advertising by sharing your usage and browsing data with advertisers. In addition, certain advertisers use cookies that can span across multiple websites (third-party cookies), collecting extensive data about your browsing behaviour and enabling advertisers to generate a detailed user profile of you based on your site-specific activities. This profile is anonymous; however, in addition to being a potential privacy violation, it can compromise equity of future information access.

Interested in learning more about website cookies? Watch this video for a comprehensive introduction: https://youtu.be/IPQhME1UYQU.

Downloading Tips

What can you do to prevent targeted advertising from appearing as you search or from showing up on your social media feeds? One way to bypass this data collection is to use a private browsing window, available in most browsers. How can you find private browsing? Look under File in your browser of choice, and see if an Incognito Window (Chrome) or a Private Window (Firefox; Safari) option is available. Private browsing prevents cookies from collecting data on your browsing behaviour.

- Clear cookies from your browser. Here's how.
- Install a privacy add-on on your browser, e.g., Privacy Badger.
- Opt out of personalized ads on Google. Here's how.
- Use a private/incognito browsing window.
- Use a secure browser, such as Tor.

Device Fingerprinting

Device fingerprinting is a process of identifying the device being used to access a website, based on the specific configuration of the device. You may own a number of devices (a desktop computer, a laptop, a tablet, a smartphone) each of which is configured based on your preferences. The goal of device fingerprinting is to create a bridge from a user's online identity to their real-world identity as a method of tracking consumer behaviour. Device fingerprinting is used by advertisers to connect with potential customers, and in combination with cookies it tracks user behaviour to develop a highly individualized user profile. Privacy awareness website Am I Unique? refers to device fingerprinting as the "cookieless monster."

A fingerprint can be created based on the following information about your device:

- What operating system (iOS, Android, Windows, Linux, etc.) is used.
- What browser and browser version are used.
- What content (plug-ins, fonts, add-ons) has been installed.
- The location (determined by device location settings or the IP address).
- Its time zone settings (which can be adjusted automatically by the network provider).

What can you do to prevent device fingerprinting?

1. Check your device fingerprint: Am I Unique? My Fingerprint.
2. Install a script-blocking browser extension.

Security

This section will focus on device and Internet security (or cybersecurity), addressing Internet-based threats such as: spam, malware, viruses, and hacking. The aim of Internet security is to protect all data (including personal data) from unwanted intrusion, theft, and misuse. It is important to keep security in mind as you navigate your digital and virtual worlds.

Activity 3.4: How Much Do You Know?

Before you continue reading, see how much you know about cybersecurity by taking this quiz: Cybersecurity Knowledge Quiz, by the PEW Research Center.

Common Security Threats

Spam

Spam messages, in the form of emails and texts, are "unsolicited commercial messages" sent either to advertise a new product or to trick people into sharing sensitive information through a process called phishing (more about phishing below). Canadian Anti-Spam Legislation (CASL) protects individuals by outlining clear rules about digital communication processes for businesses. Sending spam messages is a direct violation of the law. Businesses that send unsolicited emails to individuals are legally required to provide an

"unsubscribe" option for those who may have wanted the messages at one time but who have changed their minds and no longer want them.

Protect yourself: Tips from Canada's Anti-Spam Legislation:

1. Don't try or buy a product or service advertised in a message you receive from an unknown sender.
2. Don't reply to a message that seems suspicious to you, or click the "remove" or "unsubscribe" link.
3. Messages coming from businesses you are a customer of should have a working "unsubscribe" link to help you stop future messages.
4. Never visit websites advertised in a suspicious message, and, in particular, beware of links in such emails.
5. Fraudsters can make messages look like they come from people or organizations you know; this is called "spoofing." If you are unsure about an email message, don't open it.

Got spam in Canada? Submit information to the Spam Reporting Centre. Canadian specific

Phishing

Phishing is the attempt to steal sensitive information including passwords, usernames, or credit card information through the use of email or any other personal messaging system (e.g., text messages, a messaging app like WhatsApp, Viber, etc.).

Here's an example: You receive what looks like a trustworthy message asking you to log in to your personal account, maybe your banking account. The link in the message takes you to a fake website, created to mimic the real site. The process of logging in to this fake website allows hackers to collect your sensitive

information, providing them with your complete banking login details. This information can then be used to log in to your account and steal your assets.

Protect yourself from phishing:

1. Do not reply to emails asking for your personal information.
2. Never enter sensitive personal information on a pop-up screen.
3. Do not open attachments from an unknown person/ organization.
4. Install antivirus and firewall software on your devices, and keep them up to date.

Malware

"Malware" is short for "malicious software." Malware is typically installed on a user's device for the purpose of stealing personal information. Types of malware include: viruses, worms, trojans, adware, spyware, and ransomware. Watch this video for a brief introduction to malware: https://youtu.be/n8mbzU0X2nQ.

Adware. A type of malware that installs pop-up advertising (ads) on a device. The ads are typically unwanted, and can be very annoying. Some adware can track personal information such as browsing data, and can record keystrokes.

Ransomware. A type of malware that encrypts or locks files on your computer/device. Hackers require a payment—a ransom—before they will allow you to access your information again.

Spyware. Installed without user knowledge, and used by hackers to spy on people to get access to personal information, including: passwords, data, or online activity. Once spyware is on your computer, it can copy, delete, share, and compromise your files;

control your programs; and enable remote access, allowing someone else to control your computer.

Trojan. In an online context, a Trojan horse, commonly known as a trojan, is malware disguised as legitimate software. Once installed, it allows hackers access to your computer.

Virus. An executable program (it requires user action) that a user may have unintentionally installed on a computer, and that has the potential to corrupt data and compromise the operation of the computer. A virus needs to be opened (executed) for it to infect a computer.

Worm. A self-replicating computer program that spreads automatically across a computer, or a computer network, exploiting vulnerabilities. Computer worms are self-acting and do not rely on user activation. Worms are considered a subclass of viruses.

Hacking and Hacktivism

Computer hacking is a form of "creative problem solving" that takes advantage of computer and network vulnerabilities.

Why do hackers hack?

1. Intellectual curiosity—to see how things work.
2. Personal protection—to patch their own networks.
3. Enjoyment—to have fun with unsuspecting users.
4. Activism—to support a cause.
5. Financial gain—to make money by identifying software glitches.
6. Criminal activity—to cheat people out of sensitive information, and for financial gain.

According to Techopedia, hacktivism "is the act of hacking a website or computer network in an effort to convey a social or political

message. The person who carries out the act of hacktivism is known as a hacktivist." Technology enables hacktivists not only to spread their message, but also to mobilize people on a global scale. These virtual activists use both legal and illegal tools to launch politically and socially motivated computer attacks in support of free speech and human rights. Hacktivists are not typically financially motivated, but instead come together to fight injustice.

Examples of hacktivism include:

1. Speak2Tweet. A voice-to-tweet service created by Google and Twitter engineers to support Arab Spring protesters during Egypt's Internet blackout in 2011. Read more about Speak2Tweet in "Speak2Tweet, Spreadsheets and the #Jan25 Revolution."
2. Anonymous. This globally distributed group self-identifies as supporting the "continuation of the Civil-Rights movement" but has been criticized for their activities and identified as a potential national (US) threat. Read about the group's operations in "8 Most Awesome Hacks Conducted by Anonymous Hackers."
3. Aaron Swartz. Aaron Swartz was a computer programmer, writer, political organizer, and a hacktivist. He campaigned for open access to scholarship, and against Internet censorship bills in the United States. In 2011, Aaron was arrested for attempting to download all of MIT's JSTOR (JSTOR is a subscription-based academic-journal platform) collections, which was a violation of the licensing agreement. Aaron Swartz committed suicide on January 11, 2013. For a comprehensive insight into Aaron Swartz's life, read "Requiem for a Dream."

One of the more common ways hacktivists disrupt networks is through DoS and DDos attacks.

DoS & DDoS Attacks

Most websites have an infrastructure in place that can accommodate a large number of access requests per day—think millions. A **Denial of Service (DoS)** attack takes place when hackers overwhelm a website with too many requests—billions or trillions of them. A **Distributed Denial of Service (DDoS)** is when the attack comes from a large number of computers at once. This causes network overload, the website stops responding, and appears to be down.

DoS and DDoS attacks are made possible through the use of botnets. Botnets are networks of remotely hijacked devices injected with malware and controlled by hackers. Botnets are also called zombies, or zombie bots. Read more about botnets in this post.

Wireless Networks

Secure Wireless Networks

Do you have an Internet connection at home? If so, you most likely have a secure wireless network. Protected by passwords, secure wireless networks are the best kind to use when accessing and sharing sensitive information like: banking and payment details, your SIN (social insurance number), and any other information you'd like to keep private and protected.

Open Wireless Networks

If you have ever accessed a Wi-Fi network at a coffee shop, a mall, an airport, or at school, you most probably connected to an open (or

"public") wireless network. Open networks are typically unsecured, and you can connect to them without a password. While this is convenient and reduces your data usage, public Wi-Fi networks pose a number of security risks, so try not to access any sensitive information when connected to one.

Safety Tips

- Tips for Using Public Wi-Fi Networks (US Federal Trade Commission)
- Staying Safe on Public Wi-Fi (c|net)

Virtual Private Networks (VPNs)

One way of ensuring privacy and the security of your data when browsing using a public Wi-Fi network is to use a VPN, or a virtual private network. VPNs create an encrypted tunnel through which you can access information online, away from "prying eyes." This protects your privacy and ensures security.

- How—and Why—You Should Use a VPN Any Time You Hop on the Internet (Tech Hive)

Passwords and Encryption

Passwords are your first line of defence against external intruders. Complex passwords that are eight characters or longer and include a combination of upper/lowercase letters, numbers, and symbols are a great first step for keeping your information secure. Interested in checking the security of your passwords? Take a look at "How Secure Is My Password?"

- **Two-factor authentication**, or two-step authentication, is a login process where the user is asked to provide two authentication points, such as a password and a code shared through a text message. Two-factor authentication enhances login security.
- **Biometrics** such as iris scanning, facial recognition, voice recognition, and fingerprinting are yet another way of securing your devices, but they have their own security issues. Read the current issues with biometrics in "How Biometric Authentication Poses New Challenges to Our Security and Privacy."
- **Encryption** scrambles data so that it becomes unreadable to those without a public key, "given by your computer to any computer that wants to communicate securely with it". Encryption makes information secure as it is transmitted in code, and appears to those without the key as a random series of letters and numbers.

Internet of Things (IoT) and Security

There are approximately 8.4 billion connected "things" in the world. Maybe you are a proud owner of one or more of those things. Fitness and health trackers, smart TVs, video game consoles, voice activated assistants, smart thermostats, connected baby monitors, networked security cameras, and cars are just a few examples of what comprises the Internet of Things (IoT).

Every device connected to a network is open to security threats. Have you heard of hackers taking control of a car, or speaking to a baby through an unsecured baby monitor? How about the flaw in voice assistant Alexa, which turned Amazon Echo into a recording device? Learn about the security implications of the Internet of Things so that you don't become its next victim.

Defamation

This section introduces defamation and Internet defamation. How we conduct ourselves online, in the virtual world, can have some very serious real-world consequences.

What Is Defamation?

Defamation, or untrue statements that are harmful to someone's reputation, can be separated into two categories: libel (written statements) and slander (oral statements). The statements can be about a person, business, organization, group, nation, or product.

Defamation laws have been adopted by many countries worldwide. The United Nations International Covenant on Civil and Political Rights (ICCPR), signed by 169 countries,1 states in Article 17: "No one shall be subjected to arbitrary or unlawful interference with his privacy, family, home or correspondence, nor to unlawful attacks on his honour and reputation."2 Each country has its own interpretation of this article as well as its own penalties for violations. Ensure you understand your local defamation laws before speaking or publishing commentary, or when travelling in or moving to a new country.

What Is Not Defamation?

In Ontario, a harmful statement may not amount to slander or libel if one of the following defences applies:

Made only to the person it is about: The comment was only made to the person mentioned in the statement, and not read or overheard by anyone else.

True statements: If it is demonstrably true, and the statement is made honestly and not maliciously.

Absolute privilege: Absolute privilege means it is a statement made in court (as evidence in a trial) or in parliament.

Qualified privilege: Qualified privilege protects statements made non-maliciously and for well-meaning reasons. For example, if an employer is requested to give a reference for an employee, and they give a statement that is their honest opinion.

Fair comment: The defence of "fair comment" may apply in situations where statements made were about issues of public interest, as long as the comments were honest statements of opinion, based on fact. If statements were malicious, this defence will not apply.

Responsible communication of matters of public interest: This defence is available in libel cases. It allows journalists the ability to report statements and allegations in cases where there is a public interest in distributing the information to a wide audience. However, this defence only applies where the news or information is urgent, serious, and of public importance, and where the journalist has used reliable sources and tried to report both sides of the issue.

Activity 3.5: Is it Libel?

Are you ready to test your knowledge of libel? This activity will use example scenarios to explain what may or may not count as libel.

Try the activity: http://plato.algonquincollege.com/ac-library/libel/story.html

Accessible RTF version: http://tlp-lpa.ca/ld.php?content_id=34121101

[Alt text: a screenshot of an online activity showing the first scenario]

Case Study: Defamation

Astley v. Verdun, [2011] ONSC 3651.

Bob Verdun, a resident of Elmira, Ontario, was unhappy with the appointment of Robert Astley to the Board of BMO Financial Services. He expressed this dismay in emails to BMO employees and orally at shareholders' meetings, "alleging [Astley's] involvement with the Clarica Life Insurance Company and its role in the development of a controversial Waterloo recreation complex made him unfit for the job."

It was found that all statements by Verdun about Astley were defamatory and that Verdun acted with malice. The jury awarded damages of up to $650,000 against Verdun. The court ordered a permanent ruling for Verdun, restraining him from publishing anything in any medium whatsoever about Astley.

St. Lewis v. Rancourt, [2015] ONCA 513.

Former University of Ottawa professor Denis Rancourt was accused of defamation for a public blog post in which

he referred to University of Ottawa law professor Joanne St. Lewis as "a house negro."

Rancourt used the defence of fair comment but the jury found his statements defamatory and malicious. In a court of appeal Rancourt claimed his freedom of expression was violated, but this argument was dismissed by the court. In total St. Lewis was awarded over $750,000 in damages.

Awan v. Levant, [2014] ONSC 6890.

In 2008, law student Khurran Awan was part of a Canadian Human Rights Commission and an Ontario Human Rights Commission complaint against Maclean's magazine over a cover story they claimed was Islamophobic. Former lawyer and conservative commentator Ezra Levant wrote nine blog posts during the hearing commenting that Awan was a "serial liar" and anti-Semite. During the defamation trial brought forth by Awan, Levant tried to use the defence of fair comment, as well as his reputation as a provocative pundit. Fair comment did not stand, as Levant was found to have made the comments with malicious intent. A court of appeal held up the original finding. Levant was to pay a total of $80,000 and remove the blog posts.

Further Resources

- Top 10 Tips for Internet Defamation Victims
- EFF–Legal Guide for Bloggers: Online Defamation Law
- Cyber Libel and Canadian Courts: Canadian Internet Defamation Rulings
- Internet Defamation: The Basics and Some Things to Consider

(video)

Tips to Avoid Libel

Don't underestimate the power of posting something online.
Posting something online is often public and permanent; be sure your comment could not be considered defamation.

Never post messages when you are angry.
Walk away and cool down before you post online or send emails/text messages.

Choose your words wisely.
Writing a negative review can be acceptable; however, it doesn't have to be mean or malicious.

Defamation can affect anyone.
People of all ages can be victims or unwitting perpetrators.

Watch what you repost.
Don't retweet or repost something that could be considered defamatory.

Citations and Credits

1 Indicators.ohchr.org.

2 Ohchr.org/EN/ProfessionalInterest/Pages/CCPR.aspx.

3 Legalline.ca/legal-answers/defamation-laws-cyber-libel-and-the-internet.

Images are from the Noun Project: Strong Pencil by Nathaniel Smith; Angry Face by Ramakrishna Venkatesan; Owl by sachan; Family by Viktor Ostrovsky; Refresh by Sofia Moya. All are licensed under CC BY.

Written by Jennifer Peters, with contributions from Joseph Chan and Noé Chagas.

Harassment

In this section you'll learn about online harassment, including cyberbullying. The section will give you an overview of what harassment is, when harassment is a crime, and resources for assistance if you or someone you know is experiencing harassment.

What Is Harassment?

"Harassment is a form of discrimination. It involves any unwanted physical or verbal behaviour that offends or humiliates you. Generally, harassment is a behaviour that persists over time. Serious one-time incidents can also sometimes be considered harassment."

From the Canadian Human Rights Commission.

What Is Cyberbullying?

Cyberbullying is harassment through electronic technology. This may include harassment using text messages, social media, or online chat. Cyberbullies may harass their victims anonymously and can easily share their harassing messages and content with a large audience.

When Are Online Harassment and Cyberbullying Considered Crimes?

Some forms of online harassment are considered crimes under the Criminal Code of Canada. There is not one section alone in the code

that refers to online harassment; potential offences are detailed in different sections of the Criminal Code and include:

Child pornography and non-consensual distribution of intimate images. It is illegal to make, distribute, possess, or access child pornography. Child pornography can include material that shows or describes a person under the age of eighteen engaged in sexual activity or material that advocates sexual activity with a person who is under eighteen. It can include pictures, videos, audio, writing, or any other visual representation.

Counselling suicide is recommending or advising someone to take their own life. There are exceptions to allow certain types of professionals, such as health care professionals, social workers, or therapists to provide information on legal medical assistance in dying.

Defamatory libel, as discussed earlier in the chapter, is a written untrue statement harmful to someone's reputation.

Extortion, involves trying to force someone to do something through threats. An example could be threatening to share personal information about a person unless that person does something for the harasser.

False messages are when someone sends a message with information they know is incorrect, with the intent to cause harm. **Indecent messages** are typically messages of a sexual nature sent with the purpose of causing harm or annoying a person. **Harassing communications** are any other repeated messages sent to cause harm or annoy a person.

Identity fraud can be pretending to be someone else for the purpose of doing them or someone else harm, or to gain advantage for yourself or someone else.

Incitement of hatred is when someone makes negative public statements to encourage others to harass or cause harm to an identifiable group. Identifiable groups for this law include people recognized by colour, race, religion, nationality, ethnicity, age, sex, sexual orientation, gender identity, gender expression, mental disability, or physical disability.

Intimidation can occur when someone uses the threat of violence or threat of punishment against a person, a person's family member, or property to force a person to do something they have the right to refuse to do, or to prevent them from doing something they have the right to do.

Mischief in relation to computer data can include destroying information or content (data) on a computer or device, or changing the data in such a way as to damage it or make it unusable. It can also occur if a person is denied access to data they have the right to access on their computer or devices.

Non-consensual distribution of intimate images was added to the Criminal Code in 2014 through the *Protecting Canadians from Online Crime Act*. An intimate image is defined as an image where someone is nude, exposing their genital region, anal region, or breasts, or engaged in explicit sexual activity. It is illegal to share intimate images without the permission of the person in the photo.

Stalking, is also called **Criminal Harassment.** This could include sending repeated threatening emails, texts, or direct messages, or leaving repeated threatening messages in online comments. The threat could be towards a person or towards someone they know.

Unauthorized use of a computer can involve accessing someone's device or account without the right to do so. Other examples include disrupting or intercepting any function of a computer or device, or sharing the passwords for someone's device, allowing another person or persons to access or disrupt the function of that device.

Uttering threats includes threatening to cause physical harm, to damage or destroy someone's belongings or property, and/or to harm a pet.

Content Warning

The following case study involves topics such as self-harm, cutting,

physical abuse, suicide, and other content that may be upsetting to some readers or viewers.

Case Study: Online Harassment – Amanda Todd

The Amanda Todd case is a well-known Canadian cyberbullying case that influenced our current harassment and cyberbullying laws. In this video Amanda Todd discusses her experiences with bullying, both online and in person. Content warning: This video contains references and images of self-harm and cutting.

My Story: Struggling, Bullying, Suicide, Self-Harm (Video)

A transcript of the video can be found at https://pastebin.com/rMX6fWKU.

Reaction and Impact

After Amanda Todd's death, Bill C-13, Protecting Canadians from Online Crime Act, was brought into effect. This law added non-consensual distribution of intimate images as a form of harassment to the Criminal Code, but also caused controversy as it gave authorities more power to access and investigate the online activities of any Canadian. Some felt this law could lead to an invasion of the privacy of Canadians. Some critics also felt the new law covered ground already included in the Criminal Code under child pornography law.

While the Amanda Todd case brought cyberbullying and mental health into the spotlight, bullying still remains a serious problem for Canadian youth.

Related articles

Anti-Cyberbullying Law, Bill C-13, Now in Effect

5 Years After the Death of Amanda Todd, Her Story Still Resonates

Activity 3.6: Test Yourself

- Canada has anti-cyberbullying laws that were put in place after the Amanda Todd case through Bill C-13. Do you feel these laws do enough to protect Canadians? Does the law violate Canadians' rights to privacy?
- What could you do to help someone experiencing online harassment and bullying? How can you help prevent online harassment and bullying?

Are You or Someone You Know a Victim of

Harassment?

The following free resources provide information and support.

Good2Talk

A free, confidential helpline for students at Ontario's publicly funded colleges and universities. They provide "professional counselling and information and referrals for mental health, addictions and well-being."

NeedHelpNow.ca

Aimed at teens, this website provides tips and practical advice for victims of cyberbullying, including how to report cyberbullying, what to do if sexual images or videos of you are shared online, and how to get emotional support for you or others.

Crash Override

Offers help and resources for those experiencing online harassment.

Amanda Todd Legacy Society

Information and advocacy on bullying and mental health.

Further Resources

Legalline.ca: Cyberbullying

What Are the Potential Legal Consequences of Cyberbullying?

Media Smarts: Find Resources

Tips to Avoid Online Harassment

- Know your rights.
- No one deserves to be harassed, online or offline. Laws such as the Criminal Code of Canada and the Canadian Human Rights Act offer protection from harassment.

- Consider your words and actions.
- Sharing personal, sensitive, or intimate content that was given to you in confidence can hurt others. Your words and actions have a great impact on others even if you are not face-to-face. Information can be shared quickly and easily online so may be sent to many more people than you intended.
- Know your school's code of conduct.
- Most schools have anti-harassment policies that include protection from online harassment.
- Know your workplace policies.
- Many employers have anti-harassment policies.

Credits

Legalline.ca's page on Cyberbullying.
Get Cyber Safe from the Government of Canada.
Stop Bullying.gov pages on cyberbullying.

Images are from the Noun Project: Justice by Romualdas Jurgaitis; Racism by Gan Khoon Lay;; University by Wira; Policy by Eucalyp.

Health and Wellness

This section explores the effects of digital habits on your mental and physical health. Included here are tools and techniques for examining personal digital use, identifying warning signs, and making changes that benefit your health and wellness.

Activity 3.7: Self-Quiz

Try the activity: http://plato.algonquincollege.com/ac-library/healthWellness/story.html.

Ergonomics

People who do continuous, intensive computer work, such as data entry, for prolonged periods are at increased risk of developing a number of health problems. These include: visual fatigue, headaches, upper limb musculoskeletal injuries (e.g., carpal tunnel syndrome), and back pain.

Desk Set-Up

- Sit up straight with your feet flat on the floor (or on a footrest), and your thighs roughly parallel to the floor.
- Your chair should be fully adjustable and provide lumbar support.
- The top of the monitor should be in line with your eyes at about arm's-length distance.
- Your elbows should be at roughly 90 degrees when using the keyboard and mouse, with your wrists extending straight from the forearm. Use a wrist rest or armrest so your wrists do not dip down.
- Make sure your lighting is adequate, with no glare on the

screen. Anti-glare screen protectors are available for your monitor.
- Consider the benefits of a stand-up desk.

Task Design

- Take short brisk walks throughout the day. Besides improving your physical health, this will help relieve stress and improve concentration.
- Try using the mouse with your non-dominant hand for a while. This will cut down on RSI (repetitive strain injury) risk—and it's good for your brain!
- Do gentle stretches regularly throughout the day.
- "Stretch" your eyes once in a while. Focus on a distant object for thirty seconds, and then on mid-range object for thirty seconds.
- Use a customizable app, such as BreakTaker, that will remind you to take a walk, stretch, or exercise your eyes.

Smartphone Habits and Mental Health

Sleep

Current research has shown that the interactive use of a smartphone, computer, or video game console in the hour before bedtime increases the likelihood of both reported difficulty falling asleep and having unrefreshing sleep. The same effect is not noted for watching videos or listening to music, which are characterized as passive technology use.

These studies also report that people who leave their phone ringer on while sleeping (mostly young adults and adolescents)

report being awakened by the phone, and having difficulty returning to sleep. Even if the ringer is turned off, people may wake spontaneously and check or use a device before returning to sleep. This supports the view that texting or otherwise engaging with your phone is an arousing activity that is incompatible with sleep.

Additionally, the blue light emitted by computing devices affects levels of melatonin, the sleep-inducing hormone that regulates the body's natural clock, or circadian rhythm. Disruptions to your circadian rhythm can cause fatigue, drowsiness, irritability, and an overall decrease in mental functions. Students who feel they must use their computer at night can use an app such as f.lux, which will adjust the light from the screen to match their local level of daylight in real-time.

Memory, Mood, and Muse

Our online habits can affect the way our brains function and consolidate memories. Typical online behaviour involves performing quick searches and jumping quickly from page to page, while responding to messages and notifications that each set us off on yet another tangent. This feels good because human brains release dopamine as a reward for finding new information. However, as Nicholas Carr states, "living in this perpetual state of distraction/interruption … crowds out more contemplative, calmer modes of thinking" that are necessary for memory consolidation, learning, and knowledge synthesis (Epipheo, 2013).

This constant consumption of content jeopardizes creativity, innovation, and higher-order thinking. In our attempts to prevent "boredom," we immediately pull out our phone to fill any spare sliver of time, thus preventing the mind from the critical processes of reflection and daydreaming, which are not only relaxing, but are also known to lead to new insights and ideas. Additionally, the behaviour of constantly checking social media and constantly

consuming content has been linked, in several studies, to higher levels of stress, anxiety, and depression.

Internet Addiction

Addictive behaviours around Internet use include:

- A preoccupation with online activities that interferes with real-world social or occupational functioning.
- The experience of withdrawal symptoms (e.g., irritability, trouble sleeping, cravings) when attempting to reduce the activity.
- Hiding or lying about the amount of time you spend online.
- Being dependent on Internet activities to escape from negative feelings.

Internet habits may be associated with other "behavioural addictions" such as shopping or pornography, but gambling disorder is currently the only behavioural addiction in the DSM-5.

Internet addiction is not considered a distinct mental disorder, as it lacks some criteria of conventionally recognized addictions and may be a symptom or manifestation of other, existing disorders. The DSM-5 has recommended Internet gaming disorder for further study.

Techniques for Adjusting Smartphone Habits

Self-Awareness

Take a day or two to track how often you actually check your phone (most people greatly underestimate the number of times).

Keep a log of how you are using your smartphone: What makes you reach for your phone (are you lonely, bored, feeling self-conscious)? What sites or functions are you spending your time on? Use paper and pen, or an app such as BreakFree. Once you have identified your triggers, reflect on why and how you have developed these habits. Are there underlying issues you seek to resolve or ignore by spending time on your phone? Think about ways you could benefit from using your time differently.

Set Goals and Limits

Set specific goals and develop a timeline that will work for you, using incremental progress (e.g., start by cutting out your smartphone use fifteen minutes before bed; gradually increase this to one hour). Set boundaries of time and place that align with your goals (e.g., on weekday mornings, I will spend only twenty minutes on social media; I won't use my phone at the dinner table or on the bus).

Try This

- Change the settings on your phone and go through your applications to turn off notifications that you don't really need.
- Adjust your mindset: accept that you can't keep up with all breaking news or gossip; you don't need to comment on every post, or respond to every message right away.
- Play the phone stack game when at a get-together with friends & family.
- Tell your friends and family that you're cutting down and ask for their support. Maybe they will join you in the endeavour.

Digital Health and Wellness Tips

Check your desk: Assess your workstation with the Ontario Ministry of Labour Guide. Small changes can make a big difference in your comfort.

Sleep tech-free: Experts recommend that you eliminate smartphone use in the hour before bed, and avoid charging your phone in the bedroom.

Get mindful with your mobile: Is real life passing you by while you check your phone and scroll endlessly? Taking a day or two to track your mobile habits will illuminate any areas of concern.

Never text while driving! Not only is it extremely dangerous, it's against the law. If you are a pedestrian, pay attention to your surroundings instead of your phone; don't text while crossing the street!

Further Resources

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Images are from the Noun Project: Work by Adrien Coquet; Sleep by Adrien Coquet; Smile by Xinh Studio; Texting by Luis Prado.

PLEASE NOTE: This chapter provides information ONLY. We do not provide legal or other professional advice. If you require legal advice, speak to a lawyer. The information in this chapter is related to the Canadian landscape at time of writing.

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Chapter 4: Critical Approaches to Digital Literacy

MAHA BALI AND CHERYL BROWN



Overview

Using the Internet is probably a daily activity for many of you, but sometimes it's such second nature we don't stop to think about what underlies the information we use. In this chapter, we help you think about issues of equity in the online context and explore who predominantly contributes to the information we read. We look at who is and who isn't represented in the digital space and

how everyday platforms we use are themselves skewed towards particular viewpoints and preconceptions. We provide you with some strategies and tools to be critical in understanding the platforms you use and the information you read. We also foreground some of the negative and positive aspects of social media in constraining and enabling different people's voices.

Chapter Topics:

1. Introduction
2. Thinking About Context
3. Learning to Be Critical
4. Voices: Who Is Represented in Digital Space and Who Isn't?
5. Critical Digital Literacies: Digital Platforms
6. Questioning Digital Platforms
7. Positioning Yourself Online

Learning Objectives

After completing this chapter, you should be able to:

- Develop a critical awareness of online contexts.
- Appraise online content.
- Develop critical questioning skills.
- Understand how some individuals or groups may be marginalized online.
- Recognize issues of access to information sources.

- Understand bias of digital platforms.
- Reflect on positionality and information privilege.
- Develop increased self-awareness of biases.

Introduction

One of the most important elements of being online is the ability to be critically aware of where content comes from and who has authored it. You should be able to ask questions that will enable you to better understand context. In chapter 2, you explored the history of literacy and who traditionally has had access to the ability to read and write. Although digital technology and, specifically, the Internet have to some extent increased access to information, it is still inequitable.

There is an old saying: "Knowledge is power" (it's so old that no one really knows who said it first). In many cultures knowledge used to be very closely guarded by elders or experts. It may have been locked away for safekeeping in libraries (such as the Library of Alexandria), where only privileged people like rulers and scribes could access it.

Technology has contributed to changes in who owns and can access information. So much so that some people believe the Internet can be credited with facilitating the coming together of our global community (in that it allows people to access information and engage with the world unhindered by distance). However, it has also contributed to the fragmentation of society as it is a place for conflict and disagreement as well as new forms of exclusion.

Thinking About Context

In the following sections, you will learn some strategies and habits to help you take a critical look at whatever you find online. However, we don't usually verify every single piece of information we find online, so keep in mind that contextual knowledge can be the driver that motivates you to dig deeper.

Activity 4.1: Demonstrate Context



Figure 4.1: Kaaba.

Imagine someone asks you to watch a video of US president Donald Trump standing by a wall in the White House, near the image above, telling ABC's David Muir the

following: “But when you look at this tremendous sea of love—I call it a sea of love—it’s really something special that all these people travelled here from all parts of the country, maybe the world, but all parts of the country. Hard for them to get here.”

- If your teacher showed you this video, would you believe it?
- If you received this video on social media (e.g., Facebook, WhatsApp) would you think it was real?
- What would make you doubt the authenticity of the scene?
- How would you verify its authenticity, or its lack of authenticity?
- Before reading the text below, try to verify the authenticity of the video above and keep track of the steps you took to do so.

The trick about that video is that you need to have a lot of contextual awareness to be suspicious of its authenticity: You need to recognize that the picture Trump is pointing at is of the Muslim Kaaba in Mecca, Saudi Arabia, and that it is a picture of Muslims in pilgrimage. You need to connect that with a knowledge that Trump has repeatedly used negative rhetoric against Islam and Muslims, and that calling this a “Sea of Love” sounds out of sync with his usual rhetoric. Someone who does not have this contextual knowledge may not seek to verify the authenticity of the video; and someone who has this contextual knowledge, but is not habitually skeptical, or does not know how to verify audiovisual material, may simply believe it and move on.

Once you've finished trying to verify the authenticity of the video above, see this blog post for the full video.

One of the pitfalls in **critical thinking** is that sometimes we find ourselves compelled to confirm our own biases. **Confirmation bias** is the tendency to selectively search for and interpret information in a way that confirms your own pre-existing beliefs and ideas. In other words, you interpret new information such that it becomes compatible with your existing beliefs, and if it can't be interpreted thus, you either choose to ignore it or call it an exception (Aryasomayajula, 2017).

Information and knowledge have significant roles in supporting and maintaining the power structures of the modern world. We should be aware that just because information may be available and accessible, doesn't mean it is equitable and without bias. In principle it is possible that as long as people have the resources to access the Internet, they are in a position to make their voices heard. However, in reality, a vast majority of Internet users are not really able to make themselves heard and their concerns receive little attention. Perhaps it's more accurate to suggest that the Internet offers ordinary people the potential for power. Regardless, it is more likely used for specific purposes by those who already have power, whether symbolic, political, or social.

Activity 4.2: Equity and Bias

Watch this video by Binna Kandola on Diffusion Bias, and try a couple of these Implicit Association Tests to explore some of your own hidden biases. There may be several reasons why some online content contains misinformation:

- Ignorance; sometimes people just get things wrong or make mistakes with no malice or ulterior motive (unintentional).
- The desire to present a one-sided view based on personal beliefs (religious, political, cultural).
- The desire to promote a message that supports commercial gain (advertising, commercial bias).
- Deliberately spreading **propaganda** by a ruling body or organization (usually political).
- Limited perspectives (missing "voices"):
    - Who is represented in digital space and who isn't?
    - Who is able to participate?
    - Who has access to what already exists?
    - Even when multiple perspectives are side by side, which voices are considered authoritative? Who sets the standard for what is considered credible?

Learning to Be Critical

Trying to figure out whether a source has expertise, authority, and trustworthiness is not always easy. Mike Caulfield, in his book Web Literacy for Student Fact-Checkers (2017), offers a useful outline

for the fact-checking process. If you're in doubt about something you've found online:

1. Look around to see if someone else has already fact-checked the claim or provided a synthesis of research.
2. Go "upstream" to the original source: Most Web content is not original. Get to the original source to understand the trustworthiness of the information.
3. Read laterally: Once you get to the source of a claim, read what other people have said about the source (publication, author, etc.). The truth is in the network.
4. Circle back: If you get lost, or hit dead ends, or find yourself going down an increasingly confusing rabbit hole, back up and start over knowing what you know now. You're likely to take a more informed path with different search terms and better decisions about what paths to follow.

Activity 4.3: How to Be Critical

What is the purpose of a website? Is it to provide information? To sell you something? To share ideas? Explore the following three websites about different aspects of digital literacy to find out who owns or produces the content:

1. "Developing Digital Literacy Skills"
2. "Critical Digital Literacy: Ten Key Readings for Our Distrustful Media Age"
3. "Digital Literacy"

Keep in mind:

- There is often a page called About or About Us which should give you some clues about the intent of the authors and the content.
- There is often a link to a Terms and Conditions page that highlights legal aspects of content ownership and how you can use that content.
- There may be a Testimonials or Reviews page that tells you what other people think of the services or content.
- There may be a Help or Support page to enable you to get the best out of the site.
- If there is a Cart at the top of the page or a page called Prices, the site may be trying to sell you something.
- Contact pages often tell you where the producer is based by providing an address or map.

Check the authority of the author or producer:

- See if you can find out who the author is. Is it an individual or an organization?
- Is the author a recognized expert in the field? Are they affiliated or connected to any organization? If so, is the organization credible?
- Is the organization or body producing the information reputable?
- Does the author provide sources for their information? Can you go and check out these original sources?
- Can you contact the author or organization for clarification of any content?

Look at the content:

- How old is the information or content? Is the information current? Is the source (website) updated regularly? Does it need to be?
- Can you tell why the content has been published? Are the goals of the publisher clearly stated?
- Is the content factual or does it contain opinions? Is the content biased in any way?
- Does the content provide links or information to other sites? Are these authoritative? Do they present alternative views or information?
- Can you check the accuracy of the content against other sources?
- Does the site try to get you to register or sign up to receiving other content by email?
- Does the website contain advertising? (This could affect the content.)

Questions adapted from McGill (2017) and Caulfield (2017), CC-BY-SA.

Activity 4.4: Spot the Fake

Use the points in the bulleted lists in Activity 4.3: How to be Critical to see if you can complete the following activities.

- One of the websites below is fake, see if you can spot it:
    - Website A: Fangtooth
    - Website B: Warty Frogfish
    - Website C: Tree Octopus
    - How long did it take you to spot the fake? How did you know the website was fake? Did you do any checks on other sites to verify the information contained in the sites? Does the fake website have links to true information? [See the end of this activity for the answer]:
- Can birds intentionally start fires? Try to verify the claim.
    - Is the article "Australian Birds Have Weaponized Fire" coming from a reputable source? Can the *National Post* be trusted?
    - Return to the *National Post* article and locate the link to the original scientific study. Is this a reputable journal? What can you determine about it? How about the authors of the study – do they have relevant expertise?
    - Note what the paper says and covers and compare it to what the reporting source covers. Are the facts of the news story correct? Are there elements of the work the news story leaves out? Do your findings surprise you?

Answer: C) The Tree Octopus is fake

Activity adapted from Caulfield (2018), CC-BY

Asking Critical Questions

Asking questions is always a good idea. It will make you a better learner and thinker. Critical questioning means going deeper into your questioning and not just asking Who, What, When, Where, Why, and How, but instead asking more descriptive questions like "*Who* benefits from this?" "*What* is getting in the way of action?" "*Why* has it been this way for so long?" or "How can we change this for our good?"

For more descriptive questions, see the Global Digital Citizen Foundation's "Ultimate Cheatsheet for Critical Thinking."

Critical thinking isn't only about being skeptical. In the words of the Global Digital Citizen Foundation, critical thinking is "clear, rational, logical, and independent thinking." It's about "practising mindful communication and problem-solving with freedom from bias or egocentric tendency." There are also feminist approaches to thinking critically that involve empathy and contextuality, and trying to adopt the viewpoint and frame of reference of the "other" while refraining from judging them (Thayer-Bacon; Belenkey et al.).

Activity 4.5: Ask Critical Questions

Here are two news articles about Digital Literacy

1. "Digital Literacy Is 'Hot' but Not Important"
2. "Digital Literacy 'as Important as Reading and Writing"

Use some of the critical-questioning prompts from the Global Citizen Cheatsheet to practice critical inquiry. Ask questions of these articles and try to take your inquiry and thinking to a critical level.

Voices: Who Is Represented in Digital Space and Who Isn't?

The Internet has provided a vehicle for people to transcend geography and political borders by interacting with information and communities from across the world. The notion of *global citizenship* has taken on a new meaning in educational contexts as a world view, or a set of values, that prepares students for a global or world society. It is an acknowledgement that your nation or place of residence is only part of the world and that you are part of a global society.

As a student and a global citizen it is important that you are aware of yourself and your place in the world, and of others' places in the world, in order to begin to become aware of other people's perspectives. A tool like Gapminder—a non-profit resource for global data and statistics—can be useful in helping you do this. Gapminder allows students and teachers to look at the world from social, economic, and environmental perspectives. Gapminder works on the premise that by having a data-based view of the world you can "fight the most devastating myths by building a fact-based world view that everyone understands." It's described by the Geographical Association of the UK as an "invaluable resource for making sense of contested concepts like uneven development, inequality and change." This is particularly valuable given how

commercial social media services and search engines have contributed to the spread of misinformation.

As useful as Gapminder can be as an online resource, with so much data and so many visualizations, we must also always question the sources of data, how the data sets were chosen, and the biases in the methodological approaches used in this statistical modelling style, etc. That is, no data or information is neutral and "merely a fact"; rather, data and information are "chosen facts" that can suggest a certain picture of a situation. Gapminder is one useful tool. But it should not be the only tool you use.

Activity 4.6: Evaluate Graphical Representations of the World

The intention of this activity is to give you a sense and opinion of how the world has been visually depicted and how this representation is actually an altered form of reality. Think about where you are geographically located. To what extent are, or have, common visualizations of the world (e.g., maps) shaped your beliefs about where you are from in relation to other countries?

Below are two versions of the world map, the Mercator Projection and the Gall-Peter Projection.



Figure 4.2: The Mercator Projection (Source: Wikimedia Commons)



Figure 4.3: Gall-Peters Projection (Source: Wikimedia Commons)

1. What differences in perspective are shown by these two projections?
2. Choose one of these online resources to help you think about the differences:

- We Have Been Misled By a Flawed World Map for 500 Years
- The Most Popular Map of the World is Highly Misleading

3. See what you can find out about other maps, such as the Dymaxion and Peirce Quincuncial maps:
    - Dymaxion Map
    - Peirce Quincuncial
4. Can you find any earlier maps of the world (e.g., from the ancient, pre-modern, or medieval periods)? How did "we" represent "ourselves" in the past? Who is responsible for this representation of "us"?

The aim of this activity is to help you evaluate the different ways in which representations of particular places and positions in the global system occur. What implications do these different ways of representing ourselves and others have for our own biases?

The Mercator map is the most popular map; it is used by Google, Wikipedia, the UN, and in many other popular depictions of the world. However, the Mercator map distorts perception of the size of continents, departing from their actual land-mass size, and rendering North America and Greenland as larger than Africa, for example. What does this do to our ability to frame and understand importance, dominance, and geopolitical relationships, specifically in light of the historical power configurations among developing countries (mostly minimized, marginalized, in the Mercator projection)?

Critical Digital Literacies: Digital Platforms

So far in this chapter we have mainly focused on developing a critical approach to the actual information we find online. The following section introduces a new focus: on maintaining a critical perspective on the **digital platforms** we use every day, such as Google, Facebook, and others. It is important to recognize how digital platforms can be used in digital citizenship and activism. At the same time, it is also important to recognize that not all people around the world have equal access to these platforms, and that some people risk more than others by using these platforms.

On Bias in Google and Wikipedia

Two spaces many of us use as a first step when searching for information are Google and Wikipedia

Activity 4.7: Identify Bias in Google Searches

1. Go to Google Images, and look up the term "professor." What do you notice about the search results? Do many of the results have anything in common?
2. Now search for images of "Egypt" and compare what you find with what happens when you look up images of "Cairo." What do you notice about the difference between the search results?

You may find that most results for "Egypt" show historical monuments from the time of the Pharaohs such as the pyramids and the Sphinx while many results for "Cairo" show the modern-day city with modern buildings and bridges. The former reinforces stereotypes about Egypt as a place where people live in the desert and ride camels, missing the modern-day Egypt in favour of showing famous historical images.

Bias in Google's Algorithms

As Safiya Umoja Noble reminds us, search algorithms are not "neutral." Google's algorithm specifically depends on proxies of popularity, which means that the top search results Google returns to us are biased. They are biased in the sense that content produced by marginal people or representing marginal views may be less visible, but also that "where content shows up in search engine results is also tied to the amount of money and optimization that is in play around that content." Even more alarming, Zeynep Tufecki has reported that the money-making recommender algorithm of YouTube (which is owned by Google) increasingly shows users more inflammatory content because it keeps them on the site longer and therefore exposes them to more ads.

Bias in Wikipedia Content and Editing

Wikipedia is often celebrated as a democratic digital space, an encyclopedia of crowd-sourced information that can be edited by anyone in the world. The credibility of information on Wikipedia is now considered less of a problem than when the site first began,

as editors frequently check up on pages and highlight areas that require additional citation, occasionally removing information not supported by credible sources. Some research has shown that these frequently edited articles on Wikipedia are likely to be on par with articles on Encyclopedia Britannica in terms of accuracy and neutrality.

1. **Bias in Wikipedia content standards:** While anyone can contribute articles and make changes to Wikipedia, they must meet the standards that have been set by the organization. While some of these standards serve to remove bias, for example by ensuring that people don't create biographical entries for themselves or their friends, others, such as the requirement that all content be sourced from previously published material, means that pages about marginalized people for whom there isn't much existing information on the web, make the cut less often. The requirement that all facts be cited by a "credible" and "verifiable" source also impacts the content that is available in different languages. If you are writing an article for Wikipedia in your native language and can't find a credible reference to link to, you may have to resort to a reference for it in a different language. However, this assumes such references exist or are accessible to you.
2. **Differences in Wikipedia content based on language and region:** One notable example is the comparison between the English and Arabic Wikipedia pages for the Arab–Israeli War in October 1973. While both articles relay mostly the same facts, the Arabic version states that Egypt won that war, while the English version lists the result as a victory for the Israeli military. The Wikipedia articles don't balance these perspectives in both languages: each version of Wikipedia tells a different version of history. Both articles cite their sources, which shows that history is told from the writer's perspective. There is more than one version of history, but what matters here is to clarify how the wisdom of the crowd does not ensure

the different versions coexist in any one Wikipedia article.

Research studies such as Reagle and Rhue's look at gender bias on Wikipedia versus on Britannica (2011), highlight how Wikipedia reproduces gender, racial, and other biases. There has been a lot of coverage of gender bias in Wikipedia specifically (see "Wikipedia's Hostility To Women," in The Atlantic, October 21, 2015). Wikipedia has its own article on gender bias on Wikipedia, which starts by showing that as of 2011, 90% of Wikipedia's volunteer editors were male.

Gender imbalance on Wikipedia is usually discussed in terms of the number of Wikipedia articles on female figures versus the number on male figures, as well as the length of articles on female figures or topics of female interest versus the length of those on male figures and topics. It is also important to note that within controversial topics (e.g., GamerGate) that involve gender sensitivity, the number and strength of male editors often results in a male view being the one disseminated on Wikipedia, rather than one balanced by the inclusion of females' views. Beyond the numbers, there has been evidence of harassment of some female editors, gender imbalance, and hostility towards women, and even though Wikipedia has had several projects to try to counter the gender imbalance and increase women's contributions in Wikipedia, several have not fared well.

Activity 4.8: Comparing Wikipedia Pages

If you are bilingual or multilingual, open two Wikipedia

pages, in two different languages, on the same historical, political, or potentially controversial topic:

- Check out the Wikipedia page for the topic in each language.
- Are the pages direct translations or do they tell different stories?

If you are not bilingual or multilingual, try using Google Translate to see if different Wikipedia translations on the same topic are identical or different (sometimes just looking at the length is an indication). Google Translate is not 100% accurate, but it is relatively good for translations between English, French, German, and Spanish (Of course, those are the dominant Western languages, but they are also the ones that are easier to translate from English versus, say, Chinese or Arabic).

Questioning Digital Platforms

While many of us enjoy free-to-use platforms such as Facebook, Twitter, Instagram and many other services, we should also be aware that these are commercial providers, with profit-making intentions, which may not (and often do not) have their users' best interests in mind and may make ethically questionable choices.

Activity 4.9: Critiquing Digital Platforms

Watch this video by Chris Gilliard on platform capitalism.

In late 2017, Chris Gilliard posted a tweet asking:

> What's the most absurd/invasive thing that tech platforms do or have done that sounds made-up but is actually true?
>
> – Should old surveillance be forgot (@hypervisible) December 29, 2017

Try answering that question yourself before reading the responses.

If you go return to Chris's tweet, you will find several links to reports of outrageous and ethically problematic things tech platforms have done. Examples include:

- When Facebook used their algorithm to selectively manage people's timelines and manipulate their emotions and moods.
- When an unsubscribe service sold user emails to Uber.

Can you remember an instance of a digital platform doing something invasive or unethical? Why did it matter to you? In what ways did the platform infringe upon the rights of groups or individuals? What is the worst thing that has happened directly to you or to someone you know? What, in your view, is the most dangerous thing tech platforms can do?

Activity 4.10: Investigate Terms and Conditions and Privacy Policies

Have you ever read the Terms and Conditions or Privacy Policies of platforms you use? Some of them have extremely long and virtually unreadable policies, but others are much more straightforward.

Choose two of the platforms you use often and compare their Terms of Service or Privacy Policies.

- What did you learn?
- By using the platform are you taking risks that you had not previously been aware of?
- Can you determine, for example, if you retain the copyright for material you post to one of these platforms? (Squires, D.)

Activity 4.11: Surveillance and Online Safety

Read this article on how Facebook's mistranslation of a Palestinian's update resulted in him being arrested.

- Why do you think this happened?
- What kind of questions does it raise about who

holds power in digital platforms?

- What does this incident tell us about how digital platforms work, and about what they prioritize?
- What kinds of issues does it raise about surveillance and privacy online?
- What kind of biases does it reveal?
- How does it connect to issues of race and racial profiling online and offline? Would a similar Facebook update by a person of greater privilege have created the same kind of reaction?

Activity 4.12: Reflecting on Digital Activism

Read the following article: "How Young Activists Deploy Digital Tools for Social Change."

Note how Nabela Noor, a young American Muslim, started out as a YouTube personality doing non-activist videos related to makeup. However, Islamophobic discourses surrounding the election of Trump spurred her into using YouTube to respond. In this way, social media empowered Noor to have a voice in a space where young Muslim voices were largely unheard in the dominant discourse. But it is also important to note that she would not have been able to do this without her previous digital literacy and following on YouTube, and definitely not

without access to YouTube (which is banned altogether in some countries) and a good Internet connection (a privilege some people in rural US and Canadian towns don't have; the same applies to many in the global South).

Note how the other activist in the article, the young Esra'a Al-Shafei from Bahrain, talks about her pathway to online activism advocating for the rights of marginalized people in the Arab region. Note how she does not show her face on camera, for her own safety.

Many other forms of digital activism have been seen in recent years, such as the roles of Twitter and Facebook in the Arab Spring (however, the real revolution took place in the streets). But using social media for activism can be dangerous, and risky. Some political bloggers get arrested or worse.

Twitter has had a central role in campaigns such as #BlackLivesMatter and #MeToo. This brief video (5:30) by Tarana Burke (the founder of #MeToo) and Patrisse Cullors (the founder of #BlackLivesMatter) shows how the movements started and grew, and also what both founders consider to be a new model of activism.



A YouTube element has been excluded from this version of the text. You can view it online here: https://pressbooks.library.ryerson.ca/digcit/?p=31

While these campaigns allow people to gather and work together and find supporters, they also make them more vulnerable to personal and systemic harassment, which can occasionally move outside the screen and spill into their everyday lives. Moreover, social media has been used to amplify extremist ideologies such as white supremacy, sometimes affording anonymity to people who spread hatred and violence that can lead to physical harm. This PBS podcast suggests approaches to fight back against these online aggressions.

Think of some examples of social media use for activism, and ask yourself:

- Who has the privilege and luxury to be a digital activist?
- In what ways does digital activism reproduce patterns of offline activism, especially in terms of whose voices get heard?
- How does digital activism counter patterns of offline privilege and activism, allowing new forms of activism and previously marginalized voices to be heard?

Positioning Yourself Online

Positionality is the notion that your culture, ethnicity, gender, and many other aspects of your life (for example, education, religion, heritage, age, ability, language, etc.) influence your beliefs and values.

We felt that since this chapter reminds us to recognize the influence of the author and context on texts we encounter online, we should make our own positionality explicit: We are both scholars from the global South.

Maha is Egyptian and is an associate professor of practice at the Center for Learning and Teaching at the American University in Cairo (AUC) in Egypt. Since 2003, her work has involved supporting faculty in their teaching, including integration of technology. She also teaches undergraduate students, and recently designed and taught a course on digital literacies. Maha has a strong interest in equity and social justice issues, and her PhD from the University of Sheffield focused on the development of critical thinking for students at AUC. She identifies very much with her postcolonial hybridity, because even though she was born in Kuwait as an

Egyptian to Egyptian parents, and grew up in Kuwait, she went through British and American education, lived briefly in the US and UK as an adult, and works at an American institution. All of this makes her more aware of postcolonial issues and global inequalities and inequity. Being a woman, a mom (to a girl), and a feminist also makes her very aware of gender issues. This is why you will find many examples across the text that mention postcolonial, language (especially Arabic), and gender issues with the digital world.

Cheryl is South African and an associate professor of e-learning in the School of Education Studies and Leadership at the University of Canterbury in Christchurch, New Zealand. Cheryl has lived and worked in South Africa, Australia, and, recently, New Zealand. A common interest of hers has centred around access to ICTs (Information and Communication Technologies) and how they facilitate or inhibit students' participation in learning. In the past few years she has explored more closely the role technological devices (for example, cell phones and laptops) play in students' learning in a developing context and in the development of students' digital literacy practices. In her PhD, she explored how inequity influences students' digital experience and therefore their digital identities. As a mother to two boys who have grown up with access to technology she feels it's important to develop a healthy and critical awareness of both digital opportunities and challenges.

Activity 4.13: Reflect on Your Positionality

Think about who you are and about your past experiences in the world, the things you're passionate about, and the things that trigger pain or anger.

- How might these things shape your view of the world, the ways in which you approach new information, and the ways you choose to use digital platforms?
- What might your biases be?
- What might your fears be?
- How might they influence your digital literacy?

Activity 4.14: Self-Test

What have you learned through undertaking the activities in this chapter? Has the process of working through critical approaches to digital literacy changed:

- the way you access information online?
- your social media presence?
- the way you search online?
- how you evaluate information online?
- the websites you regularly use?
- your understanding of who contributes to information on the Internet?
- how you personally interact and engage with people online?
- what information you will contribute online?

Make a list of the changes you plan to make in how you will use the Internet in the future.

Is there any personal action you can take to increase representation and equality on the Internet?

References

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Chapter 5: Developing Evaluative Literacy Skills

LISA LEVESQUE



Overview

This chapter discusses evaluative literacy, or the skill of exercising critical judgment, as it relates to the Internet: using Web search tools and recognizing their flaws, recognizing the need to be critical online, and developing your ability to evaluate online information. It will discuss online hate speech and fake news as examples of why it is necessary to be aware of the inherent flaws in the ways that we access and evaluate information. It also provides a toolkit for evaluating information both online and offline.

Chapter Topics

1. Introduction: Invisible Networks
2. Web Searching: How Google Works
3. How to Be Critical of Web Search Results
4. The Almighty Click: The Internet and the Media
5. Evaluation Toolkit

Learning Objectives

After completing this chapter, you should be able to:

- "Understand how information systems (i.e., collections of recorded information) are organized to provide access to relevant information" (ACRL, 2015, p. 22).
- "Formulate questions for research based on information gaps" (ACRL, 2015, p. 18).
- "Develop and maintain both an open mind [and a critical stance] when encountering varied and sometimes conflicting perspectives" (ACRL, 2015, p. 13).
- "Monitor [the information you gather] and assess [it] for gaps or weaknesses" (ACRL, 2015, p. 18).
- "Suspend judgment on the value of a particular piece of scholarship until the larger context for the scholarly conversation is better understood" (ACRL, 2015, p. 21).

Introduction: Invisible Networks

Everywhere we go, we are surrounded by invisible networks. The food we eat, the electricity we use, and the roads that we drive on are all small parts of the larger systems of agriculture, infrastructure, and transportation. Of course, you don't have to be a farmer to appreciate an apple or an electrician to operate a light switch. However, part of being an informed citizen means gaining a basic appreciation for vast realms of knowledge, or systems—networks— that you will not likely master in their entireties. If you don't become an electrician, you should still know enough about electrical wiring to avoid electrocuting yourself during minor home repairs.

The Internet is another invisible network. What makes the Internet unique is its defining role in shaping how we acquire information. Like turning on a light switch, using the Internet is deceptively simple. You don't need to understand coding or hypertext protocol to update social media or search Wikipedia. These tools are designed to be simple. Safiya Noble, Librarian, Assistant Professor at the University of Southern California, and expert on biases in search engine algorithms writes, "When you go to Google, it's just a simple box against a simple background. And that conveys, through its aesthetic, the idea that there's nothing going on. Its design logic is so simple: type in a word, and you'll get something back" (Noble & Roberts, 2018, para. 18). The simple design of tools like search engines hides how complex they truly are, and their own marketing often portrays them as answer machines. As Google writes on their webpage, "You want the answer, not billions of webpages" (Google, n.d., para. 1). Search engines cater to simplicity, and they work very hard to deliver the type of results that they believe users want to see.

This is not to say that using the Internet doesn't require skill and literacy. As we discussed in chapter one, digital literacy and other associated literacies (such as media literacy and visual literacy) are

essential for navigating the online world. In addition, Internet users are participants in shaping and creating the online information landscape. In order to be active, engaged, and discerning participants we have to use our judgment and be critical. In other words, we must develop **evaluative literacy**.

Evaluative literacy means the ability to assess information, especially by contextualizing, critiquing, and confirming its truthfulness. Evaluative literacy means developing the ability to think critically: to know that you are a participant in a network larger than yourself. When confronted with a simple answer from a simple search box, be critical. This type of literacy will make you a more savvy digital citizen, able to identify bad information and seek out better, more substantiated facts. It will also improve your other literacy skills, making you a more informed contributor to online communities and a more critical consumer of media.

Metaliteracy or literacy about one's own literacy, contributes to evaluative literacy by allowing you to spot the gaps in your knowledge. Mackey and Jacobson define metaliteracy in this way:

> To be metaliterate requires individuals to understand their existing literacy strengths and areas for improvement and make decisions about their learning. The ability to critically self-assess different competencies and to recognize one's need for integrated literacies in today's information environments is a metaliteracy. (Mackey & Jacobson, 2014, p. 2)

Metaliteracy requires curiosity and a little humility: recognize what you don't know about a topic, then be willing to learn more and correct your understanding.

This chapter will cover the basics of online information networks, namely search engines and bias in digital information. From there, it will discuss how to develop evaluative literacy and metaliteracy skills in order to interact with this network. By learning more about what is often unconscious and unquestioned, we can all become more aware digital citizens.

Web Searching: How Google Works

Search engines are essential tools for navigating the Internet. They make the vast number of websites that are available online quickly accessible to searchers. Although it's possible to use the Internet by typing in direct addresses, search engines are the predominant way that most Internet users conduct online research (Forrester, 2016). Understanding how they work is an important first step in understanding how information is organized and accessed online and how we interact with it. As Alexander Halavais, Associate Professor of Sociology (Arizona State University) and former President of the Association of Internet Researchers writes, search engines are "of interest not only to technologists and marketers, but to anyone who wants to understand how we make sense of a newly networked world" (2009, p. 1). It is important to view them not as "an object of truth" but as tools with specific design strengths and flaws (Halavais, 2009, p. 1-2).

Although there are differences between competing search engines, they all work in essentially the same way. The search engine sends out an automatic search tool, called a **spider**, **crawler**, or **robot** to investigate publicly available webpages. The spider, essentially a small snippet of code, travels via links, compiling information that it finds about webpages into a search engine index. When you enter a search into a search engine, your query is run against the index and search results are produced using a complex algorithm. The job of this algorithm is to to match your keywords to relevant web pages and give you the results it thinks you want to see.

These three elements, **spider**, **index**, and **algorithm**, are all essential to the speed and success of search engines. Spiders automate data collection and retrieve information faster than any human ever could, meaning that search results can keep pace with frequently updated websites. The index enables quick information retrieval. Think how long each search would take if, instead of

referring to an index, search engines had to check each query against each webpage individually. The Web would grind to a halt due to the increase in traffic alone. The algorithm increases relevancy, reducing the amount of time that a searcher must spend sorting through results to find an answer. The more relevant a search engine can make the results, the more satisfied the searcher, the logic goes.

Did You Know?

A website is a collection of webpages. For instance, the website http://www.ryerson.ca/ contains the "About" webpage, http://www.ryerson.ca/about/, the Campus Life webpage, https://www.ryerson.ca/campus-life/, and so on.

While there are a number of major search engines, such as Bing and Yahoo, none are as prominent as Google. Since approximately 2006, Google has held the majority market share of search engine use* (Google Gains Search Market Share), producing increasingly large revenues year after year and establishing itself as the "dominant" search engine in North America* (Frommer, 2014). To argue for its dominance and "monopoly status," Safiya Noble cites noted academic researchers Siva Vaidhyanathan, Elad Segev, and the US Senate Judiciary Committee Subcommittee on Antitrust Competition Policy and Consumer Rights (Noble, 2018, p. 26-28, 36). As of February 2017, as Figure 5.1 below shows, Google holds the majority market share on all device types, far outstripping its

competitors. Due to Google's dominance, competing search engines have copied much of Google's functionality. This means that learning about Google is a good way to learn about Web searching generally. This chapter focuses primarily on Google because its lead role in functionality and market dominance means that it is simply more important at the current time than other search engines. If search engines were bodies of water, some would be the Great Lakes or the Baltic Sea; Google is the Atlantic Ocean.

*An important exception to Google's dominance: Google is blocked in China and so is superseded in that market by search engines that operate there, such as Baidu.

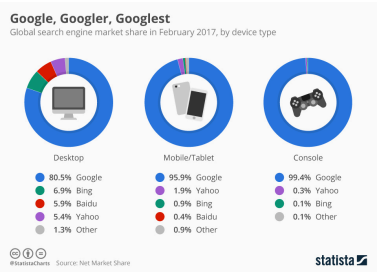


FIgure 5.1 Search Engine Global Market Share (Armstrong, 2017)

Google's dominance can be traced back in part to its first early success. **PageRank** was developed by Google founders Sergey Brin and Lawrence Page (1998) while they were at Stanford. This algorithm ranks websites based on how many other sites link to it. The more **inlinks**, or links to a website, the higher the ranking; much like in high school elections, popularity is key for rising to the top. The logic is that the more popular a site, the more relevant it will be to a searcher. PageRank has been an exceedingly influential idea, establishing Google's early success and influencing its competitors and shifting the focus of web search engines to focus on relevancy.

Activity 5.1: Inlinks and PageRank

A number of tools exist to analyze web traffic statistics and inlinks, including Moz Open Site Explorer and Alexa. Try using one of these tools (you may have to create an account) to view inlinks, traffic, and rankings for a website such as https://www.nytimes.com. While Google's algorithm might be hidden from view, many aspects of Web searching are verifiable through empirical tests.

Key Takeaways

Linking to a site is like voting for it, according to search algorithms that take inlinks into account. It is best to avoid linking to any site, online post, or publication if you do not want to contribute to its success.

In Google's current algorithm, PageRank remains an important part of the overall structure (Luh, Yang, & Huang, 2016), but it is just one algorithm that is used in conjunction with hundreds of other factors. For Google as well as for other search engines, webpage

characteristics that will lead to higher ranking include the number of times a search term appears on a given webpage, where it appears on the webpage, the currency of the webpage or when it was last updated, and the page load time. Information about the searcher is also included in determining the relevance of results generated, including the searcher's location and information pulled from past search history. This search history is drawn from Google account information, such as Gmail; this is the same with Microsoft account information for Bing; and with other accounts for their related search engines. Browser cookies will also store information that a search engine can draw upon. Browsers can store information about users' online activity even when they are not searching or using search accounts. Using "incognito" or a private browsing mode limits the amount of information collected but does not stop browsers from storing personal information entirely.

Of course, not all of the factors of Google's algorithm can be determined. While diligent Internet researchers have deciphered aspects of the algorithm, and Google has published some (see Google's "How Search Works"), the exact formulation remains a well-guarded, multi-billion-dollar secret. The algorithm as it currently exists is incredibly complex, with algorithms inside algorithms and many complicated factors that impact one another. These include algorithms like RankBrain, which determines the intent of a searcher to assess relevance; to do this, it uses **artificial intelligence**, also called machine learning or deep learning. The algorithm learns about the searcher's intent by processing large amounts of data. The strength of artificial intelligence systems is that they can process more data than humans ever could (Metz, 2016). A search engine like Google is what is known in computing as a **black box**, meaning that its mechanisms for determining results are not visible, and it is impossible to know exactly why it spits out the answers that it does. This has always been true for the general searcher, and now, due to advances in artificial intelligence, even the engineers who designed the algorithm would struggle to fully explain why a search produces the results it does.

There are a few major characteristics built into web searching, as described here, that all researchers should be aware of. A few examples are: web search results only include publicly accessible information, with emphasis placed on the more popular results; more recent information is more likely to appear than older information; and, results will be different depending on who is searching and where. Websites that have been optimized for web publishing will also appear higher in result sets and be more easily searchable, a practice called **search engine optimization (SEO)**. While websites that are run on a small budget might have excellent SEO, websites whose creators have a larger budget are far more likely to have had time and money invested in improving their SEO. As a result, the structure of Web searching favours more commercial sites, which make up a large amount of Web content to begin with.

Did You Know

Google's unofficial motto is "Don't be evil." It was their official motto, included in their Corporate Code of Conduct, until 2015 (Bock, 2011). It might be surprising to see the word evil in a company statement. But if Google intended to do evil they could do so: they hold a huge amount of power in providing access (or not) to the world's information. In contrast, their mission statement is: "to organize the world's information and make it universally accessible and useful." If universal access to information is a noble goal, as most of us

would agree it is, then this one company holds the potential for both incredible good and incredible evil.

Recommended Reading

To learn more about algorithms, have a look at the Microsoft Research Lab's Critical Algorithm Studies reading list (Gillespie & Seaver, 2016).

To learn more about PageRank, see the Wikipedia entry on this topic, which gives a basic overview and compares it to other ranking algorithms (Wikipedia contributors, 2019). This Wikipedia article will likely also be updated should Google stop using PageRank to determine search results. Since Wikipedia can be edited by anyone at any time, this is a good opportunity to practice reading with a critical eye.

How to Be Critical of Web Search Results

Learning about the structure of Web search engines is the first step towards being critical of them: seeing their strengths, flaws, and inherent biases. The individual structure of the different search engines means that some handle queries better than others. For example, if you were to search for "sushi," Google might return results for restaurant locations, ratings, and even directions to nearby spots. These results would be relevant if you were looking for somewhere to eat. They would be less relevant if you were looking for sushi recipes, or the history of sushi. For that, you would need to add more keywords and adjust your search.

Activity 5.2: Comparing Different Search Engines

Examine the search results for "sushi" in different search engines.

1. Search for "sushi" in three different search engines: Google, Duck Duck Go, and Ask.
2. Compare the first page of results. How are they the same? What's different?
3. Do all three sets of results include information that is specific to your location? Why?
4. How many of the first-page search results are commercial (related to buying and selling) in nature?

In completing the activity above, you might have noticed a distinction between the way that commercial and non-commercial websites appear in search results. To put it plainly, there is a lot of content that exists online for commercial purposes. These results, due in part to good SEO, often rise to the top. The search engine interface can enhance the focus on commercialism. A number of Web search engines, including Google, have ads appear on their first page of results, and it can be difficult for searchers to distinguish advertisements from results. The majority of Google's revenue is derived from advertising (Alba, 2017), a fact that is worth keeping in mind when assessing the prominence of ads in the interface design and when considering the design of its algorithm.

In Google, the default search-result set for "sushi" is nearby restaurant information, as Google has determined that this is the

most relevant information for most users. This sushi search is a benign, if consumerist, example of how search engines privilege some kinds of information over others. To see less benign examples, look to more controversial kinds of information. When a search for geographic information is performed in Google, Google maps are often the first result. The Google map depictions of politically disputed borders, such as those between Israel and Palestine or between China and Tibet, will reflect the delineations accepted by the government of the country where the search is being run. Someone searching for information in Israel will see different borders than someone in Palestine would, thus, in a sense, seeing an alternate version of the world. Google claims they attempt to remain neutral, when possible, practising "agnostic cartography," but Google also follows the laws of countries in which it operates (Usborne, 2016). If a government states that it is illegal to depict borders in a specific way, or even to share information about an occupied territory, then the local version of Google will comply.

Key Takeaways

Popularity is not the same as authority or credibility, and Web search results will reflect cultural bias.

Border disputes are a classic example of how Google skews information, but there are countless others. Algorithmic bias expert Safiya Noble (2016) does an excellent job of describing problematic Google searches related to race and gender. Since Google privileges popular, current, and algorithmically tailored information, its results

often reflect, and even amplify, dominant cultural ideas, including racism and sexism. In the linked video below, Noble describes how racism and sexism are present in search engine auto-corrections, biased search-result sets, and the privileging of false but popular information over fact. For instance, she describes how search results for Trayvon Martin center around the narrative of his death. This is upsetting because it paints an incomplete portrait of his life, as if he were only the victim of a racialized crime. Thinking about the search engine results for Trayvon Martin is a way to think about the holes that exist in the information that is available to us online. She also describes how Dylann Roof, the racist mass-shooter, found confirmation for his burgeoning white-supremacist beliefs through a hate site. By possessing a veneer of credibility and being first in the search result set for "black on white crime," the site Roof found was able to perpetuate racist myths and inspire a killer. Unlike the classic reference tool of the encyclopedia, Google has no human editors fact-checking information, no balanced reporting, and no limitations on subjects like hate speech. An encyclopedia also doesn't change based on the information that you have read previously, whereas Google relevancy ranking are always changing, giving searchers who look up racist content more of the same in later searches.

Have a look at this conference presentation by Safiya Noble at the Personal Democracy Forum 2016, entitled "*Challenging the Algorithms of Oppression*." Copyright: Safiya Noble, Personal Democracy Forum.

Pause and Reflect

Safiya Noble's video (2016) is disturbing for a number

of reasons. It describes how the Internet is a powerful tool, but that it is important to remember that the information it contains is only a snippet of the information available in the world. It can be all too easy to be caught in an **echo chamber**, an online setting that reaffirms your pre-existing biases without challenging your opinion or exposing you to new ideas. Echo chambers can be enabled by Web structures, such as Google's algorithm, that are specifically designed to present information that it predicts you will find relevant.

These examples highlight some of the problems inherent in using search engines to find information. This is not to say that search engines are bad or that you should not use them. Instead, understand their biases and inherent limitations as a tool. Search engines like Google base their algorithms on the behaviour of searchers writ large and on the content that is available online. In this way, they reflect the society that has created them, often reaffirming systems of power– capitalism, dominant political regimes, and white supremacy. When assessing information, it is important to ask yourself: What is the **metanarrative**, or overarching story, that is being told? Which voices are not being heard? We like to believe that the Internet is a place where all voices can be heard, but that is unfortunately not true. As Alexander Halavais (2009) writes, the information on the Web is not flat, or equal; it's "chunky," or arranged in such a way that the most popular sites and voices account for most of the traffic (p. 60). The design of search engines and relevancy ranking algorithms "increase the current imbalance" (p. 68). Even programmers at Google will admit that their designs contain societal bias, although they might be

more likely to use a word like "fairness" to soften the blow (Lovejoy, 2018).

In addition to boosting popular sites and commonly held biases, the Internet is also a powerful tool for winning hearts and minds to extremist causes. Hate groups are on the rise in North America, and a cause according to experts is online recruitment. A systematic review of ten years of research on cyber-racism (Bliuc, Faulkner, Jakubowicz, & McGarty, 2018) found that "racist groups and individuals" share "remarkable creativity and level of skill in exploiting the affordances of modern technology to advance their goals," which include recruitment, developing online hate communities, and spreading racist content (p. 85). In the global, digital world, "those with regressive political agendas rooted in white power connect across national boundaries via the Internet" (Daniels, 2012, p. 710). By contrast to the online world, you're unlikely to encounter racist propaganda in most library or bookstore collections because items in these collections are carefully curated by human experts in the information field to exclude this content. In contrast, Internet searches are selected and filtered using a highly automated process.

As racist content is not filtered from searches, uncritical users can become easy targets for hate sites. An effect of the relevance that Google and other search engines focus so much on producing is that searchers are willing to trust these services to deliver results, a phenomenon that Indiana University librarian and ethnographer Andrew Asher calls "trust bias" (2015). In other words, searchers tend to trust search results unquestioningly because most of the time, they deliver. As a result, we are susceptible to them those times that they deliver poor results. Search results always need to be approached with a healthy amount of skepticism. It's your job as a researcher to assess the information that an online search gives you and to know to look for bias. Keeping the structure of search engines like Google in mind will help you assess when and how it is an appropriate tool to use.

Pause and Reflect

Google claims to be neutral in the way that they collect and share information, but what is neutrality? It is always worth remembering that the algorithms Google and all other Web services rely upon were written by people, and people have their own inherent biases. From this perspective, all algorithms are a reflection of someone else's idea of neutrality. Their idea of what is neutral may be different from yours or mine.

Recommended Reading

For more on the myth of black on white crime and how it is perpetuated through digital mediums, see the 2018 Southern Poverty Law Centre article, "The Biggest Lie in the White Supremacist Propaganda Playbook: Unraveling the Truth About 'Black-on-White Crime." It gives a history of this concept and makes the point that "The internet has made it immeasurably easier for white nationalists to gather, publish articles, discuss ideas and reach out to those like Roof who might be amenable to their messages" (Staff, 2018, para. 105).

The Almighty Click: The Internet and the Media

The connections between websites in the form of inlinks help shape the web by raising the findability of some types of content and diminishing that of others. However, you don't need to be a Web editor to effect change. Even if you don't use social media or have never written a blog, you have still helped shape the Internet just by being a consumer of content. This is because search engines are dynamic and reactive. Every click you give to a webpage contributes to its traffic rank and popularity. Clicks are a major contributing factor to the search engine ranking of every website, from Wikipedia to the official website of the White House. Many sites, including reputable media websites like that of the New York Times, generate revenue from advertisements on their site and rely on that advertising to remain in business. This is one reason **clickbait** exists: even though clickbait content is usually disappointing, the headline is so intriguing that clickbait articles get traffic, and traffic means revenue from advertising.

As a result, the types of websites that receive clicks are the types of websites that thrive. Consider the phenomenon known as **cyberchondria**, anxiety produced by searching for medical information online. A 2009 study by White and Horvitz describes how "web search engines have the potential to escalate medical concerns." This is because a search for a term like "chest pain" will give results for serious medical conditions, such as heart attacks. Fearing the worst, users are likely to click on results related to these more serious conditions. These clicks then shape the structure of the web, meaning that a search for chest pain will rank results for heart attacks higher than other, less serious conditions. It is a vicious cycle of medical search anxiety that causes most searchers who look for benign conditions to conclude that their death is imminent.

One of the largest effects has been the recent phenomenon of **fake news**, a term that increased in popularity in 2016 during the

United States presidential campaign and election. Misinformation has always existed—think of the old adage that history is written by the victors—but fake news is a distinct, contemporary version of misinformation. The exchange of clicks for cash has had a major influence on online media, as discussed in chapter 2. For example, online news readers might skim headlines that appear from news **aggregator** sites, like Facebook or Flipboard, without paying attention to the author or information source. Fake news usually focuses on topical content that is sensational or emotional, such as a breaking election story. This type of content demands a quick read and response, rather than an in-depth analysis. Fake news relies on the format of online news to be successful: it is easily accessed, skimmed, and shared. However, it also draws deeply on essential flaws in human behaviour. It appeals to our emotions, and we are less likely to be critical when emotionally affected. And, when news fits our pre-existing beliefs and biases, we are less likely to question it. In psychology, this is called **confirmation bias**. Fake news succeeds because it is scintillating and emotionally appealing. Like alarming medical information, fake news feeds on its own popularity. The more it is clicked on, the more popular it grows.



Figure 5.2 This photo of a peaceful religious march has been captioned on Facebook as a march in favour of Sharia law. Snopes, a fact-checking website, has identified this as fake news and reports that this video was viewed millions of times. The man who posted the video, Mike Cernovitch, is a member of the fringe political movement called the alt-right, and the misrepresentation here is politically motivated xenophobia. Copyright: Snopes https://www.snopes.com/video-muslims-sharia-ashoura/

Fake news also succeeds because of our very human preference for convenience. It's easy to read the headlines. It's much more intellectually difficult and time consuming to think critically, do in-depth research, and question sources on a regular basis. Yet this is what is required to be a responsible digital citizen and an effective researcher. The more you are aware of the biases that exist in digital information systems as well as your own biases and emotional blind spots, the better equipped you will be to counteract bias of all types.

Evaluation Toolkit

Up to this point, this chapter has addressed how to be critical of search results. The focus will now shift to evaluating online sources themselves. The reason for this is until we as a society can reinvent Google or limit the amount of hate speech and other misinformation online – complicated goals – our own best line of defence against poor information is ourselves. Developing evaluative literacy is essential for protecting ourselves from poor information, and the best way to develop it is to practise on a regular basis. Question the author you are reading. Question their research methods. Question the publications they write in, and question their reason for writing. Experts, well-founded research, and credible publications can all stand up to this kind of scrutiny. Being inquisitive is the best form of defence against misinformation.

Of course, it's also helpful to have a toolkit at the ready to help you decide what information is valuable and what is not. The following toolkit is broken into two parts: evaluating all types of information, and evaluating digital information.

Evaluating All Types of Information

A classic tool that can be used to evaluate any kind of information (both online and offline), including academic and popular, physical and digital sources, is the PARCA test. This tool can be used to help you identify a resource's strengths, weaknesses, and biases. The PARCA test can be used for in-depth evaluation, but it can also be used as a quick exercise once you are familiar with the test and once critical questioning has become an ingrained practice for you.

PARCA stands for purpose, accuracy, relevancy, currency, and authority.

- **Purpose**

    - What is the author's purpose in writing?
    - Who is the intended audience?
    - What is the central argument? What are its implications?
    - Is the author participating in a larger conversation about this topic?
- **Accuracy**
    - Does the author use accurate evidence to support the argument?
    - If so, can you verify this evidence?
    - Does the publication have measures in place to improve accuracy, such as a peer-review process?
    - Can you distinguish between the facts being presented and the author's opinion on them?
- **Relevancy**
    - Is this work relevant to your research question?
    - How would you use this work in your own writing or creation?
    - Does the work come from a relevant discipline?
    - Does the relevancy of this resource change your search strategy going forward?
- **Currency**
    - When was this work published?
    - Are the author's facts current?
    - If the author is writing about a particular time and place, have the circumstances changed?
    - How important is currency to this field of study? For example, currency is very important for cutting-edge scientific research but can be less important for literary analysis.
- **Authority**
    - What makes the author an authority on this subject? Consider credentials, experience including prior publications, identity, and any other indicators.
    - Has the author published previously on this topic? When,

and where?
    - Is this a reputable publication?
    - Does this work come from a mainstream or marginalized perspective?

Evaluating Digital Information

The PARCA test allows you to take an in-depth look at the content of a resource. But it doesn't look closely at format and it doesn't look outside the work to explore the larger context it exists within. The next two sections, "Technical Tools" and "Fact-Checking," will help you do just that. Web publications and websites, ranging from New York Times articles to blog posts, are all the products of an online network and they must be read in this specific context.

Technical Tools

This list of tips should serve as a basic introduction to some characteristics specific to digital information. They aren't hard-and-fast rules; for instance, a site that ends in .edu is normally affiliated with an educational institution, but this is not always the case. Online sources of misinformation will often copy the signs of legitimacy to blend in. As always, exercise critical thinking. In contrast to the PARCA test, using these tips is meant to be a quick and immediate form of evaluation.

- **Check the URL:** Legitimate news sources usually have a professional URL that matches the name of their organization. For instance, the website for CBC news is http://www.cbc.ca/news. Fake news URLs are less likely to be professional in nature or identifiable as a distinct news organization. They may have a URL that describes their mission statement and

bias; they might also attempt to appear legitimate by adopting a formal name. Just because the site you are visiting has the word "Association" or Chronicle" in the title, that doesn't mean it is legitimate; you may need to fact-check the site in more detail.

- **Identify the top-level domain of the URL:** The domain is the name of a website URL eg. www.cbc.ca. Each of the elements of this web address has a specific purpose. The ".ca" portion of this address is called the top level domain. Other common top level domains include ".com," ".org" and ".edu." It is easy to misread the top level domain. There is limited regulation around domain name registration, so a top-level domain such as .org that is conventionally used for not-for-profit organizations doesn't guarantee that a site is actually a not-for-profit website. Fake news sites sometimes use URLs that mimic legitimate sites but use a different top-level domain: for instance, http://www.cbc.ca.co/news, where .co is the top-level domain. It's the final .co that determines the website location, and this url has nothing to do with the site www.cbc.ca.
- **Determine the nature of the site:** Check for an About Us or Contact Us page. How does this website describe itself to the world? If they have a social media presence, how does this site present itself there? Look for keywords related to bias or statements that seem inflammatory or questionably factual.
- **Analyze the quality of the web design:** Examples of poor Web design include sites with too many colours or fonts, poor use of white space, and numerous animated gifs. Good Web design is a sign of credibility. A news organization like the CBC can afford to hire a Web designer (or in fact a team of Web designers); they cannot afford to have an unprofessional-looking website. This is not to say that all sites with good Web design are legitimate or vice versa. Plenty of objectionable sites may have the money to ensure they look good, and similarly, some admirable organizations don't put enough money into a

good-looking site; however, the overall visual impression you get from a site will usually tell you something about the intentions and focus of the organization.

- **Check the article's links:** Are there any and do they work? How recent or up-to-date are they? The links that extend from one web page to another will tell you a lot about the political affiliation of that site and what the author considers authoritative. For instance, a right-leaning political site will likely link to other right-leaning political content. The Internet is one big web: what other strands of that web is your site connected to?

Fact-Checking

In a 2017 study at Stanford University, when participants were asked to compare two websites—that of the legitimate American Academy of Pediatrics and that of the homophobic splinter site the American College of Pediatricians—both historians and students performed poorly in comparison to fact-checkers (Wineburg and McGrew, 2017). The fact-checkers, in addition to soundly beating their peers at identifying the illegitimate site, were also more efficient with their time. This led the researchers to conclude that being able to fact-check and **read laterally** are essential skills when evaluating digital information. Reading laterally requires opening new tabs and searching for information about a resource or website, rather than reading the content on the site itself.



Figure 5.3: From the 2017 study by Wineburg and McGrew, this image shows the percentage of participants in each group who selected the College or the Academy as more reliable. This bar chart shows that 100% of student fact checkers identified that the American Academy of Pediatrics as the more credible site. By contrast, historians performed worse than the fact checkers (50% American Academy of Pediatrics, 10% American College of Pediatricians, and 40% Equivocate) and students performed the most poorly (20% American Academy of Pediatrics, 64% American College of Pediatricians, and 16% Equivocate).

Fact-checking requires verifying through independent sources context for the source you are evaluating. Here are a few suggestions for learning about a source's context:

- **Learn more about the publication:** There are many fact-checking websites that can help you verify an online story and learn about the reputation of a website. Two of the best-known and most reliable are factcheck.org and snopes.com. You can search these sites for verification about a questionable fact or information about a site. Searching for the name of a url in a search engine using quotations will also help you determine its reputation. Best of all, googling a url in quotation marks doesn't give any clicks to sites that you would rather not visit.

- **Triangulate the information:** Read about a subject and verify the facts from a number of sources. Ideally, the sources you compare should have different perspectives and different purposes. To dig even deeper, determine where the facts originated. Are they from a direct source such as a study, report, or in-person investigation, or from somewhere else? Track down the primary document if possible. Is the primary document itself from a credible source, such as a well-known university or research group?
- **Read up on the author:** Read other works by the author and find out basic biographical information. This may reveal biases and objectives. For example, a journalist will have a different objective than a lobbyist. If the article has no attributed author, then this is a red flag that the article may be the product of a **content mill** and might not be subject to editorial review.
- **Research the images**: If an image used in a news article looks suspicious to you, try using TinEye or Google Reverse Image Search to find out if the image has been used elsewhere. If the image is legitimate, searching for other images of the same scene might provide you with more context.
- **Check who owns the domain**: If you're curious about who owns a website, try looking it up on WHOIS. For instance, a search for cbc.ca will show that it is owned by the Canadian Broadcasting Company, which is to be expected. Knowing who owns a domain can tell you a lot about the purpose of the site.

Pause and Reflect

Wineburg and McGrew (2017) use the term "**lateral reading**" to describe reading about a source, like a webpage, rather than reading the source itself. However, there is more than one way to read across texts. **Transliteracy** is defined as "the practice of reading across a range of texts when the reader seamlessly switches between different platforms, modalities, types of reading, and genres" (Sukovic, 2016). Transliteracy is an essential skill for netchaining, which occurs when a reader follows links, citations, and ideas from one resource to another (Sukovic, 2016). Digital resources encourage transliteracy and netchaining through their interconnectedness, and lateral reading is an essential skill to evaluate information.

Recommended Reading

The open access textbook Web Literacy for Student Fact-Checkers by Michael A. Caulfield (2017) is an excellent introduction to fact-checking.

Activity 5.3: Test Yourself

1. Before reading this chapter, what assumptions did you have about the structure of the Internet? How have those assumptions changed?
2. Imagine that you have the job of creating a better search engine. How could you organize information in a way that does a better job of balancing what information rises to the top and what sinks to the bottom?
3. This chapter listed some problems with Web searching, such as the bias towards foregrounding more recent information. Can you think of any other biases that exist in Web search results because of the structure of Web searching?
4. If a government states that it is illegal to depict borders in a specific way, and Google Maps complies, is that giving in to censorship?
5. Evaluate this website using fact-checking techniques: Who is the author, and what is his authority? Do you think this a reputable website? Why or why not?
6. After you have fact-checked the site, assess this article from the site above using the PARCA test.

Resources

To check Web-traffic information:

- Alexa Website Traffic, Statistics and Analytics
- MOZ Open Site Explorer: link research and backlink checker

To fact-check online information:

- FactCheck.org
- Snopes

To search for images, including descriptions and online locations:

- Google Images
- TinEye Reverse Image Search

To identify a domain owner

- WHOIS

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Chapter 7: Joining the Digital Conversation

KATIE BLOCKSIDGE AND AUTUMM CAINES



Overview

This chapter discusses knowledge creation through digital conversation, and outlines how student scholars can bring their own questions and thoughts to a wide range of online conversations, including academic conversations. Students will examine their current role in online discourse, and learn how to locate and join new discussions of interest.

Chapter Topics

1. Introduction
2. Digital Identities: Who are you online?
3. Finding the conversation
4. Participating in the conversation

Learning Objectives

After completing this chapter you should be able to:

- Seek out digital conversations taking place in your area of interest or field.
- Contribute to digital conversations at an appropriate level, especially a scholarly level.
- See yourself as both a participant and a consumer in digital scholarly conversations.
- Act confidently as a student scholar in online scholarly environments.
- Identify barriers to entering scholarly conversations via various digital venues.

(ACRL Framework, 2016)

Introduction

Have you ever walked into a social gathering or party and realized

you didn't know anyone in the room? Let's imagine such a situation. You are nervous, but you decide to stick it out: you slowly circulate the room and listen to the conversations. A few of the conversations do not interest you, but one is focused on a TV series you watch and so you linger a bit longer to listen to the different perspectives. As in all good conversations, people are not just standing around agreeing with one another. Different conversationalists with different points of view are making and supporting dissenting arguments about elements of the plot and different characters. Since you have joined in the middle of the conversation, it may seem a bit confusing. No one person's point of view entirely encapsulates a full analysis of the show, but everyone's comments combined begin to build a complete overview and interpretation of the program. Eventually, you add your opinion of a recent episode and are drawn deeper into the discussion; before you know it, an hour has passed and you are well integrated in the gathering. You are now an integral part of the conversation.

Online scholarly conversations occur in much the same way. Researchers and scholars from all over the world communicate through digitally mediated tools such as social media, personal blogs, email listservs, and video chats: they use these to help grow their networks and move their research forward. As a college student, you might think that you are not yet ready to join these conversations and that you need to wait until you are further into your major, or maybe even until after you have graduated, before you can make your voice heard. Responsible participation in reputable communities of practice that are concerned with accuracy, reliability, and respect for **intellectual property** can be a powerful experience for a college student developing their own authoritative voice. College is a time for branching out, and part of that process can be discovering you have questions and ideas that may be of value to a broader conversation concerned with the creation and dissemination of knowledge.

Digital Identities: Who are you online?

All of us present ourselves differently depending on context. We take on different roles based on the complex interplay of how others see us and how we see ourselves. Simultaneously, you can be part of a family, a team, a cohort of colleagues, and a circle of friends, and the way you see and present yourself may be different in each of these contexts. The differences in your identity within each setting may be based on your interest in these groups and on how others in these groups see you. For example, the way you talk to your instructor in class is different from the way you talk to your friends over lunch, which may in turn be different from the way you communicate with friends in an online forum.

If you spend a lot of time using **digitally mediated communication spaces**, you have different identities across different platforms. For instance, in your college or university course management system you are viewed by others as a student and you present yourself as a student. Your identity as a student is reinforced by several factors, including: the university's system administrator limiting the control and options that you have as a student and the academic expectations of your role as a student. For instance, on a purely technical level you just don't have as much control over the system as your professor does: you can't see everyone's grades. Additionally, your identity is influenced by the expectations of your role as a student and your teacher's role as an instructor: your professors give you directions about how to successfully complete the course rather than the other way around. All these external factors reinforce your identity as a student in that particular digital environment. However, in a forum for your favorite multiplayer online game you may be an authority for certain aspects of gameplay. You may actually have moderator privileges on the forum and others may look to you for expertise. Just as with identities in the rest of your life, online identities are contextual and authority in them can change based on the platform or on your role

at a specific point in time. You likely won't be a student user of your course management system forever: you will graduate and take on new roles in a variety of contexts.

People may develop new or separate digital identities for a variety of reasons. Some do not want to interact with others online yet choose to broadcast messages about their upcoming projects. Others may choose to communicate and connect with others online through longer interactions. Depending on your individual context, the decision to interact with people online can be challenging; it requires an output of time, energy, and attention that you may not be able to spare. For instance, let's think of a working parent who may also be attending classes to earn a university degree; part of their coursework might include using social media and other digital tools to engage with their peers and build upon their own academic work. However, there are only so many hours in the day that can be dedicated to these online conversations; people need time to tend to non-academic conversations, their family, friends, meals, and sleep. As you develop your presence in academic online conversations, you might find it helpful to schedule the amount and dispersal of time (how much and when, e.g., one hour in the morning and two hours in the evening) you will dedicate to growing your own online network.

Digital participants may find that they face barriers depending on their gender, race, ethnicity, legal status, sexual orientation, and/or socio-economic status. People who have any of these vulnerabilities may be hesitant to interact or engage in open online environments. Take a moment to picture a student journalist who has just published an article in her university newspaper focusing on a recent provincial election that had become contentious. The first few online comments addressed the content of the article, but the next comments quickly became focused on the journalist herself; derogatory remarks were made about her appearance, ethnicity, and intelligence. The same type of comments appear on the next few articles she publishes for the school paper, particularly when those articles are cross-posted to the student newspaper's Twitter

account. The student journalist initially shrugs off the abusive comments, but after several of the commenters direct-message her on Twitter, she becomes more alarmed. She decides that maybe journalism isn't the career path for her, and makes an appointment with her academic adviser to explore other programs of study.

According to a 2017 Pew Research Study, women disproportionately experience online harassment, and women experience harassment differently than men do. That same study also found one in four black Americans have faced harassment because of their race. It is important to remember that context is everything and that the same experience can be interpreted differently by different people because of their background or status. It is also important to remember that this ambiguity does not excuse bad behaviour; part of your responsibility as a digital citizen is to treat your peers with respect and empathy.

There are entire populations across the planet who do not have the means or opportunity to interact with others online. While the Internet provides many people with the ability to join a wide range of online conversations and activities, a significant portion of the world's population is unable to participate. In their 2017 report The State of Broadband, the ITU/UNESCO Broadband Commission for Sustainable Development found that approximately 52% of the world population did not have access to the Internet. Cell phone ownership is much higher, with the number of mobile cellular subscriptions outnumbering the total world population; access to reliable and fast cellular connections remains an issue, as only 76% of the world lives within reach of a 3G network. As a student scholar and digital citizen, you should be aware of the myriad barriers that prevent some individuals from joining online conversations, resulting in the loss of their knowledge, viewpoints, and networks. These barriers can range from limited access to the Internet to a need to remain anonymous to maintain personal safety. The Internet is open to all; that has huge advantages but can also make it easy to identify, track, and harass vulnerable populations—and even those you may not immediately think of as vulnerable. Be respectful

of your peers and colleagues who may be reluctant to join you in online conversations.

It can be helpful to think about digital identities within a framework called "Visitors and Residents." Developed by White and Le Cornu, the Visitors and Residents **typology** is a way to think about how you use the Internet in different contexts; a visitor sees the Web as a series of tools to be used for a specific job or task, while a resident sees the Internet as an actual place where they develop relationships and acquire knowledge (White and Le Cornu, 2011). It is important to point out that the Visitors and Residents typology lies on a spectrum; it's not simply a set of two boxes, one of which you must fall into. You may be a Visitor in some contexts, and a Resident in others; these identities are not set in stone, and will evolve and change throughout your life in higher education and beyond.

While Visitor and Resident typology asks us to place **digital identity** on a scale indicating mode of engagement, it simultaneously looks at another continuum: personal versus professional/academic. You probably interact much differently online as a student scholar than you do in more social digital spaces. As an undergraduate student, you may still consider yourself a Visitor to many of the conversations occurring in your major, or within the career field you hope to one day join—for now you may be spending more time learning facts and background than communicating and engaging with others who are also interested in that major or field. It is important that you take time to listen to the more experienced voices in your field or major, but students can also make important contributions to these academic conversations. Many of the people currently participating in scholarly conversations were once Visitors themselves, but they identified areas within the conversation where they had questions and thoughts that could be shared; even as students, they still knew they had an important point of view to share with the larger community.

Activity 7.1

Consider your own use of the Internet and social media: Which platforms do you use often? Which do you avoid? Have you become more familiar with certain platforms (such as your course management system) because of job or academic requirements?

Take a few minutes to view this video of David White creating a Visitors and Residents map of his own digital identity. Using his example as a guide, draw a map of your own digital identities within the Visitor and Resident typography.

Did You Know

Below are some examples of individuals who were able to affect real change and make impact through working in a broad digital conversation.

The story of this FedEx employee who discovered the largest prime number has been making the rounds: https://www.popsci.com/worlds-largest-prime-number-discovered.

An amateur astronomer has discovered five comets of

interest to stargazers worldwide: https://www.scientificamerican.com/article/ask-the-experts-how-do-amateur-astronomers-discover-comets/.

Recommended Reading

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Finding the Conversation

We engage in conversations every day: standing in line at the coffee shop, asking for directions, starting a course project, or just waiting for class to begin. You may have started or followed threads on Twitter, texted in class, or interacted with your friends late into the night using a video chat app. For each of these scenarios, you might have started the conversation yourself or been pointed towards the conversation by a friend or peer. If you joined an ongoing conversation on Facebook or Twitter, the conversation might even have been brought to your attention by the algorithms and advertising specific to those products.

If you have written a paper in which you include citations from

other sources, you have participated in another kind of conversation; one that took place in a scholarly context, and at a slower pace. For example, imagine you have to write a paper on algae blooms in freshwater lakes for your biology course. Before you start writing, you will do some research in Google Scholar or in your library databases to locate background information and journal articles that you can cite in your paper to advance your argument. As you read your journal articles, you may notice that the authors cite additional outside sources to address their own argument; they are bringing other people into the conversation that is occurring within their article. When you then cite these sources in your own written work, you have joined this same scholarly conversation.

But how do you find scholarly conversations that are occurring outside academic papers? Remember our party from earlier, the one that you entered alone, where you had to tough it out getting to know people? Well, what if instead of entering the party alone, you had a friend who was meeting you there and was going to introduce you to people? Sometimes you can find conversations through others who are having similar conversations. In this way you can build a network of people who can help you find the contexts and content that you need to further your research. These "friends" bringing you to the "party" may be your teachers, supervisors, and advisers, but also other scholars whom you might be citing in your papers. Not all scholars participate in the open but it is worth checking to see if someone whose work you are connecting with maintains a blog or engages on social media.

Activity 7.2

Using the search engine of your choice, search for one of your professors online. Do they have a professional presence online? What can you learn about their research interests?

In online arenas, scholarly conversations may evolve different paces. Let's consider two common methods of online conversation: personal blogs and social media.

- **Personal blog** – these feature longer pieces of writing and, if it's activated, the comments function allows for dialogue that can be more in depth and take place over a longer period of time. Online conversations can sometimes feel like they move very fast, so a blog can offer an opportunity for discussions that need to develop over time. However, blogs can also make it feel like the writer is shouting into the void of the Internet if the author doesn't have an active online network.
- **Social media** – The quick-response possibilities within social media platforms allow conversations to move quickly, mirroring the kinds of discussions you might have face-to-face. Many platforms also make use of tagging or hashtags that allow users to quickly follow or locate new discussions. Because conversations on social media platforms move so quickly you may find them overwhelming. Remember to start slowly and be comfortable with how the conversation may develop without you.

Any new social environment, be it face-to-face or online, can have different norms, behaviour, or jargon that is unfamiliar. Returning to our party metaphor from earlier, this is when it can help to have a friend or guide with you as you venture into a new conversation;

they can provide context for the discussion, answer questions, and point you to new sources of information. As with any new environment or learning experience, you might feel overwhelmed by all the information; give yourself permission to read over the conversation carefully and take everything in. Listening is a great way to begin your interactions in a face-to-face or digital conversation.

Consider talking to your professors to see if there are any individuals in their fields who are active participants in digital conversations. Who are they talking to at conferences, and who do they cite in their own research? Use the university and city library databases to find recent articles about topics in your field of study, and then see if you can find any information on the authors of those articles. Do they have a digital presence?

Activity 7.3

Take a look at the following article, blog post, and Twitter conversation. How is each example engaging with a conversation? Who is involved in each conversation? What key differences do you notice among the conversation types?

Article: "A Critical Take on OER Practices," by Sarah Crissinger

Blog post: "New Directions in Open Education," by Mike Caulfield

Twitter conversation: "CritLib—Open Educational Resources"

Pause and Reflect

Think about a time when you entered a new environment, such as the first day of a new class, joining a new sports team, or starting a new hobby. How did you get to know people in your new environment? Did you dive right in, or step back and observe? How could these experiences inform your behaviour as you start to join conversations in digitally mediated spaces?

Participating in the Conversation

Thinking back to our party metaphor again, we have already reviewed how much easier it can be to join a conversation when you have a friend to guide you. You have someone to help you identify key players, and to assist you with understanding any jargon or professional terminology. While you may already have some experience with online conversations as part of your social activities, the discussions you engage in as a student scholar can hold a different weight: you are entering professional realms.

In a study of undergraduate student researchers, Riehle and Hensley (2017) found that while students were excited about sharing their research with the public, they were also concerned about the long-term ramifications of publishing their work in an online environment. Other scholars might benefit from the work the undergraduate researchers had performed, but students felt

conspicuous about publishing before they had even finished their degree program. "One interviewee expressed concern that undergraduate student work, especially work done earlier in the college experience, would be easily accessible via Google Scholar anytime someone searches [their] name for years to come" (Riehle and Hensley, 2017). The open and shared information networks created by digital conversations grant new participants a much higher degree of visibility than was ever possible in the past. Participants have a larger audience, but are perhaps also subject to more scrutiny; you really have to do your research before you hit "publish."

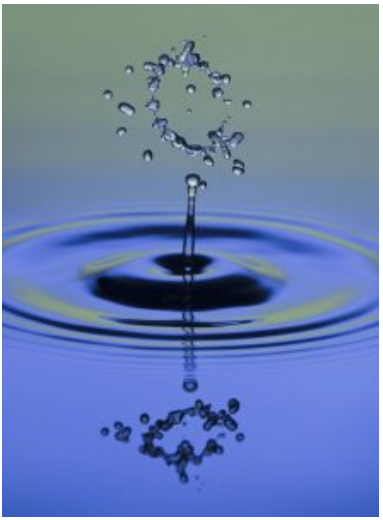


Figure 7.1: Blue Green Ring

As a student scholar, you will need to consider the ripple effects of your own participation in online discussions within your field and areas of interest. For example, the paper you wrote in your final year of university, and that you submitted to the learning management system will likely never be available to an outside audience. However, a blog post you wrote on a controversial topic will continue to exist, even after your own viewpoint may have evolved and changed completely. While this doesn't mean you should avoid these open conversations, you should carefully consider your responsibilities as an active participant. Stepping into a scholarly conversation online can be an act of establishing your professional credentials. It is likely that the networks you create through these discussions will assist you in other areas of your academic and work life. This is valuable. Just make sure you are

ready to accept being associated with the comments or ideas you are putting out into the world now for years to come.

As you consider your role as a participant online, you may decide that you are not quite ready to introduce your own research or work into the public eye. This is where asking questions can be an excellent entry point into the larger conversation: it is low stakes and allows you to familiarize yourself with other participants and with the parameters of the discussion before you decide how much of your own identity and work you are comfortable sharing and discussing in public.

Pause and Reflect

Let's return one last time to our party metaphor. You are completely engaged in the conversation regarding your favourite television show when you notice a late arrival to the party standing quietly by the wall. They are watching the conversations around the room, but are unsure how to step into a discussion mid-stream. It is now your turn to take on the role of the friend or mentor and introduce this new arrival into some of the conversations around you, just as your friend earlier assisted you. Conversations in any medium cannot flourish without the participation of new partners and fresh ideas; as a student scholar, this is a time to take advantage of the many discussion opportunities occurring in your field and to develop your own network of peers.

Activity 7.4

Search a social media platform of your choice for hashtags or keywords related to your major or area of interest. Can you identify a frequently used tag or keyword? Are there individuals who stand out as active participants within those conversations? Are their contributions thoughtful, informed, and backed up with evidence and reliable citations?

Suggested Readings

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Glossary

intranet: A private online network that is only available to an organization's employees or members.

open access: research that is available online without cost, time delays, or other barriers.

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- Figure 7.1 Blue Green Ring by Joe Dyer © CC BY (Attribution)

About the Authors

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text

Glossary

Aggregator

A republisher of information originating from other sources. Republishers like Facebook use an algorithm to determine what content to display.

Algorithm

A set of rules used to calculate an answer to a query, or question. Web search engines use highly complex search algorithms.

Black Box

A way to describe a device that is characterized by its inputs and outputs and where the calculations at work are hidden. An algorithm is a kind of black box.

Clickbait

Online content with an intriguing title or pitch but insubstantial content. A product of the contemporary digital information environment.

Confirmation Bias

The tendency to selectively search for and interpret information in a way that confirms one's own pre-existing beliefs and ideas.

Content Mill

A disreputable type of online publication where writers are often anonymous and content is produced quickly and often without verification of facts.

Critical Thinking

The objective analysis and evaluation of an issue in order to form a judgement.

Cyberchondria

Anxiety produced by browsing online medical information.

Digital Capabilities

Those capabilities which fit an individual for living, learning and working in a digital society

Digital Footprint

The trail of 'electronic breadcrumbs' you leave behind you as you use the internet both intentionally but also unintentionally.

Digital Identity

Refers to your "online self", the electronic representation of who you are.

Digital Literacy

The ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers

Digital Native or Net Generation

The idea that a person who has been born or brought up during the age of digital technology will be familiar with computers and the Internet from an early age.

Digital Self

The way you use the range of technologies and digital tools you use in different aspects of your life

Digitally Mediated Communication Space

Any online location or platform that can be used to communicate with others. Examples include Gmail, Facebook, Twitter, Snapchat, WordPress, and Tumblr.

Echo Chamber

An online environment that reinforces pre-existing biases and beliefs.

Evaluative Literacy

The ability to assess information, especially by contextualizing, critiquing, and confirming its truthfulness.

Fake News

Misleading or biased information, usually political in nature, enabled by digital forms of information sharing.

Index

For search engines, an index is a collection of webpage information compiled by spiders and used to generate search results.

Inlink

A hyperlink connecting one webpage to another. If site A links to site B, that counts as one inlink for site B.

Intellectual Property

An original work or invention to which an individual or company has rights. For example, a research paper that you write for class is an original work and you own the copyright to that paper; no one else can use your paper unless they cite you. Depending on copyright law where you live, you may also

be able to apply for a patent, copyright, trademark, etc. for your original work.

Lateral Reading

Fact-checking by reading contextually about a website.

Metaliteracy

The ability to identify gaps in one's own knowledge, understanding, or literacy skills.

Metanarrative

From postmodern theory, a grand, overarching story of the way the world functions, which is used to explain and justify; a narrative about narratives.

PageRank

An initial rule used in Google's algorithm where webpage relevance is determined by inlinks.

Positionality

The notion that personal values, views, identity, and location in time and space influence how one understands the world.

Propaganda

Information, especially of a biased or misleading nature, used to promote a political cause or a particular point of view.

Search Engine Optimization (SEO)

The practise of editing a website to improve Web search-result ranking.

SMART Goals

Goals that are Specific, Measurable, Attainable, Relevant, and Time-bound.

Spider

Also called a crawler or a robot, this snippet of code is used by search engines to webpages and retrieve information for the index.

Typology

Classification based on types or categories. For example, linguistic typology classifies languages according to their structure.