The Impact of Communication Technology on Employee Productivity During Government Mandated Lockdown in Canada

June 2023

A Literature Review

Trevor Woodman

Student, Post-Graduate Diploma - Computer Science

Website: <https://trevorwoodman.ca>

ePortfolio: <https://essex.trevorwoodman.ca>

TABLE OF CONTENTS

[Abstract 4](#_Toc139024096)

[Literature Review 8](#_Toc139024097)

[Digital Literacy Among Canadians During Lockdown 8](#_Toc139024098)

[Canadian Adoption of Communication Technologies During Lockdown 11](#_Toc139024099)

[References 12](#_Toc139024100)

# Abstract

With the outbreak of the COVID-19 pandemic the Canadian government, like many other governments around the world, began imposing lockdown measures, forcing organizations to rapidly adapt to hiring, training, retaining, and enabling a remote workforce. This literature review examines the impact of communications technologies, both existing and emergent, on employees’ productivity during lockdown in Canadian organizations, as well as the efficiency of these technologies by reviewing the digital literacy of Canadians. By synthesizing and evaluating scholarly articles, empirical studies, and reports by trusted sources, this review provides insight into the impact that communications technologies had, and continue to have, on Canadian employee productivity and digital literacy in the workplace under unprecedented circumstances. The goal of this paper is to present existing research and to provide additional data where knowledge or information is lacking.

For many Canadians, the lockdown caused by the COVID-19 pandemic was a fairly immediate and jarring series of events, culminating in several provinces and territories implementing lockdown policies, procedures, and processes over only a few days, overnight, or even the same day in some cases. This immediacy after the World Health Organization announced COVID-19 a global pandemic disrupted countless organizations, both private and public. As employees moved from an on-premises workforce to a remote one, the importance of communications technology became paramount. Modern communications technology has come a long way and gone are the days that productivity meant a multi-party email chain filled with attachments. Today, communications technologies encompass many facets of human interaction and collaboration, including video and tele-conferencing, instant messaging, project management software, voice over internet protocol or private branch exchange phone systems, and of course email.

The solution for the lockdown was, of course, working from home or working remotely, something that was previously only available to the privileged few. This presented unique opportunities and challenges for the Canadian workforce. On one hand, this shift in mindset and procurement of tools enabled and encouraged seamless communication and collaboration, bridging the physical divide between employees. Video conferencing platforms became extremely popular, very quickly. For example, Zoom’s stock price rose over 700% during the initial waves of the pandemic, going from USD $76.02 on January 6th, 2020, to USD $559 on October 20th the same year (statista, 2023). Instant messaging software rapidly grew in popularity as well, eclipsing email usage by multitudes in only a few months. Microsoft Teams grew from 32 million daily active users on March 12th, 2020, to 44 million a week later (Spataro, 2020). By October 27th, 2020, Teams had tripled their daily active users to 115 million (Warren, 2020).

On the other hand, the suddenness of the lockdowns and the rapid adaptation of work from home lifestyle has introduced challenges, both human and technical in nature, that need to be navigated. Technological barriers including technical ability and disparities in access to internet in Canada, especially in rural areas, is a formidable challenge in of itself, affecting the ability of some Canadians to fully leverage the tools required to effectively work from home. Moreover, the increased reliance on digital communications has led to informational overload and digital fatigue as employees are inundated by communications from multiple sources, including email, instant messaging, and video conferencing. Fatigue can very quickly lead to burnout, as these sources are also used in a personal context outside of work to talk with family and friends also in lockdown, to watch presentations or seminars for education, or to learn or build on new or existing skills or hobbies (Sharma, 2021). Furthermore, the boundaries of work and life become increasingly blurred in a work from home environment, as many employees find it difficult to establish clear and personally enforceable separations between their professional and personal lives. This can be exacerbated by poor management training or techniques and sub-par or toxic organizational culture.

This literature review will examine two main themes, digital literacy among Canadians during lockdown (Theme 1), and Canadian adoption of communication technologies during lockdown (Theme 2).

“Lockdown” in Canada is a ubiquitous term that encompasses various lockdowns as they were imposed by provincial and territorial governments. The Canadian federal government did not impose lockdowns at a federal level but did restrict or impose on specific groups or individuals at a federal level, including restriction of international travel and mandating vaccination for the Core Public Administration (CPA, federal employees), Royal Canadian Mounted Police (RCMP, national police), and international travellers.

# Literature Review

## Digital Literacy Among Canadians During Lockdown

According to Statistics Canada, 94% of all Canadians had household internet access in 2020 (Statistics Canada, 2020), showing that Canadians have, mostly, adopted a connected lifestyle. This does not speak to digital literacy, however, which is among the worst in developed countries, ranking 23 on the 2021 Digital Skills Gap Index (Wiley, 2021). Historically, the Canadian government has placed an emphasis on digital literacy as being a key proponent in the future of the Canadian workforce, although this goal has been marred over the years by the differences in elected political parties and, of course, the COVID-19 pandemic. As was evident and researched several years before the pandemic, the Canadian federal government has been lethargic in their pursuance of the incorporation of digital literacy most importantly into K-12 education and workplace training or upskilling, despite private sector research and reports and federal acknowledgement that digital literacy is an important factor (Hadziristic, 2017).

From 2018 to 2022, the number of Canadians employed in “professional, scientific, and technical services” industry increased from just under 1.5 million to 1.8 million, and it stands to reason that Canadians employed in this industry are, by majority, digitally literate. Given the loss of 350,000 in the “forestry, fishing, mining, quarrying, oil, and gas” and the overall increase in the goods-producing sector of 90,000, we can safely deduce that many of those Canadians moved sectors. If we drill down to the numbers of growth and loss in each industry, we could also safely deduce that many of the Canadians moving sectors were also being employed in the “professional, scientific, and technical services” industry (Statistics Canada, 2023).

As I touched on previously, the Canadian government has recognized the importance of digital literacy, implementing initiatives such as the Digital Literacy Exchange Program. This program, although it is under-funded and a very typical bandage on a greater issue, it has reportedly supported the training of 400,000 Canadians in its first phase. This appears to be a good statistic, although the root cause of digital literacy issues in Canada is the lack of a federal plan for education in schools and upskilling post-graduation (Hadziristic, 2017).

From personal experience in the public sector as an information technology professional, these digital literacy statistics are quite liberal. A vast majority of employees have very basic technical skills that do not exceed opening email clients, booking a meeting, or saving a document in a specific location on a computer. Minor issues such as a transient network or systems issue, such as a dialogue box that is merely providing information, is often taken as a breaking function, leading to a helpdesk ticket. Often, these issues could be resolved simply by reading the warning in the box or by having a very basic understanding of how a computer works. Unfortunately, this has been prevalent in the different provinces and territories I have held positions in. Referring to more specific statistics from Statistics Canada, they claim that from 2018 to 2020, nearly 1.4 million Canadians went from what they call the “have-not” to the “have” side of the “digital divide”. This indicates that these Canadians went from either non-users or basic users of the internet and digital technologies to a higher classification. The study by Wavrock et al. outlines five classifications or groups: non-users, basic, intermediate, proficient, and advanced. The study claims that, in 2020, the number of advanced users totalled 36.7% or 11.6 million, proficient 21.8% or 6.8 million, intermediate 22.5% or 7.1 million, basic 11.2% or 3.5 million, and non-users 7.7% or 2.4 million. Advanced users had an increase of only 4.5% over the study period. A surprising takeaway from this study is that these classifications were based on what was, predominantly, basic lifestyle and digital technology operation, such as changing privacy settings, accessing news, listening to music, updating an operating system, downloading files, and basic computer functions like copying or moving files or folders. These functions and services are quite often automatic or made so intuitive by the companies offering them that they are “foolproof”. Measuring digital literacy against these data points, it is evident that not only is Canada in dire need of further research as it pertains to digital literacy as a whole, but also for the federal government to provide decisive direction and proper funding to institutions and initiatives to raise this level of digital literacy to one that befits a developed country.

## Canadian Adoption of Communication Technologies During Lockdown

To preface this section, most of the statistics related to communication technologies also include information technologies, as they are often grouped under the term “information and communication technologies” or ICT. Individuals that work in IT are often referred to as an ICT specialist. I have not included general ICT statistics in this review, as this contains a myriad of technologies, but I may refer to sources that extrapolated or generalised based on ICT statistics.

The COVID-19 pandemic, and subsequent lockdown, significantly accelerated the adoption of communication technologies among Canadians. The shift to remote work and the need for virtual communication to facilitate not only work, but social interaction among friends and family, have prompted individuals and organizations alike across Canada to rapidly adopt various digital communication technologies, including the federal government themselves, opting for using the approach of using any communications technology available as long as the topic of conversation was not classified (Government of Canada, 2020).

Communication with friends and family has always been important to Canadians, but this has increased as lockdowns and safety measures were placed into effect. In 2021, 34% of Canadians that use the internet daily cited that it was for staying in contact with family, and 33% for friends (CIRA, 2021). This has naturally increased the time Canadians have spent in front of a screen, with 63% estimating that their screen time has increased.

# References

Cyr, A., Mondal, P., & Hansen, G. (2021). An inconsistent Canadian provincial and territorial response during the early COVID-19 pandemic. *Frontiers in Public Health*, *9*, 708903. Available at: <https://www.frontiersin.org/articles/10.3389/fpubh.2021.708903/full> (accessed 29 June 2023)

Government of Canada (2020). Leveraging communication and collaboration tools during COVID-19. Available at: <https://www.canada.ca/en/department-national-defence/maple-leaf/defence/2020/04/leveraging-communications-tools-covid-19.html> (accessed 30 June 2023)

Hadziristic, T. (2018). The State of Digital Literacy: A literature review. Available at: <https://brookfieldinstitute.ca/the-state-of-digital-literacy-a-literature-review/> (accessed 30 June 2023)

Heshmat, Y. & Neustaedter, C. (2021). Family and Friend Communication over Distance in Canada During the COVID-19 Pandemic. Available at: <https://dl.acm.org/doi/abs/10.1145/3461778.3462022> (accessed 30 June 2023)

Sharma, M.K., et al. (2021). Webinar fatigue: fallout of COVID-19. Available at: <https://doi.org/10.1186/s42506-021-00069-y> (accessed 29 June 2023)

Spataro, J. (2020). Microsoft Teams at 3: Everything you need to connect with your teammates and be more productive. Available at: <https://www.microsoft.com/en-us/microsoft-365/blog/2020/03/19/microsoft-teams-3-everything-you-need-connect-teammates-be-more-productive/> (accessed 29 June 2023)

Statistics Canada (2020). Access to the Internet in Canada, 2020. Available at: <https://www150.statcan.gc.ca/n1/daily-quotidien/210531/dq210531d-eng.htm> (accessed 30 June 2023)

Statistics Canada (2023). Table 14-10-0023-01 Labour force characteristics by industry, annual (x 1,000). Available at: <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410002301> (accessed 30 June 2023)

Vailshery, L.S. (2023). Price of Zoom shares traded on Nasdaq Stock Market in 2020 and 2023. Available at: <https://www.statista.com/statistics/1106104/stock-price-zoom/> (accessed 29 June 2023)

Warren, T. (2020). Microsoft Teams usage jumps 50 percent to 115 million daily active users. Available at: <https://www.theverge.com/2020/10/27/21537286/microsoft-teams-115-million-daily-active-users-stats> (accessed 29 June 2023)

Wavrock, D., et al. (2022). Canadians’ use of the Internet and digital technologies before and during the COVID-19 pandemic. Available at: <https://doi.org/10.25318/36280001202200400004-eng> (accessed 30 June 2023)

Wiley (2021). 2021 Digital Skills Gap Index (DSGI). Available at: <https://dsgi.wiley.com/global-rankings/> (accessed 30 June 2023)