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Digital Policy Hub

Digital Policy Hub — Working Paper

Shrinking the Digital Divide: Raising Digital Literacy in Rural Areas

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The Digital Policy Hub at CIGI is a collaborative space for emerging scholars and innovative thinkers from the social, natural and applied sciences. It provides opportunities for undergraduate and graduate students and post-doctoral and visiting fellows to share and develop research on the rapid evolution and governance of transformative technologies. The Hub is founded on transdisciplinary approaches that seek to increase understanding of the socio-economic and technological impacts of digitalization and improve the quality and relevance of related research. Core research areas include data, economy and society; artificial intelligence; outer space; digitalization, security and democracy; and the environment and natural resources.

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Policy Memo

Shrinking the Digital Divide: Raising Digital Literacy in Rural Areas

Daniel Dela Cruz

Bottom Line, Up Front

Canada has come a long way since the early 2000s in addressing the digital divide across the country, but much of the national effort has been centred on broadband expansion. In the wake of new disruptive technologies such as 5G and artificial intelligence (AI), a stronger emphasis must be placed on the development of digital skills and the strengthening of digital literacy for Canadians of all ages in order to boost productivity and well-being and to further Canada's competitive edge on the global stage.

Key Points

- Canada needs to focus on closing the digital divide in addition to advancing its broadband infrastructure. In order to equip Canadians with the skills and edge to be proficient participants in the digital economy by using and leveraging information and communication technology (ICT) and AI, further attention must be placed on digital literacy. Efforts are actively underway to expand broadband infrastructure in Canada through to 2030.
- Canada's current digital literacy framework is composed of a fragmented landscape of policies across jurisdictions.
- A national digital literacy strategy would help coordinate digital skills provision in Canada across jurisdictions and ensure continuous funding for these programs.

Recommendations

- **Recommendation 1: Canada should establish a national digital literacy strategy that connects individuals with various actors for learning.** A national digital literacy strategy for Canada would connect citizens, governments, non-profit organizations (NPOs) and educational organizations for further development of digital skills and competence, including AI.
- **Recommendation 2: Canada's national digital literacy strategy for Canada should have a long-term orientation with ongoing funding, seeking to support both youth and lifelong learners.** To date, much attention on building digital skills and literacy has been placed exclusively on youth in Canada. More effort needs to be made in encouraging ongoing and iterative digital literacy training for learners of all ages, many of whom may not have had the opportunity to adequately build these skills in their youth.
- **Recommendation 3: Canada should leverage existing data sets on digital literacy and conduct further research into digital literacy levels in the country's partnership with First Nations communities and its territories.** Canada should use the data from the Programme for the International Assessment of Adult Competencies' (PIAAC's) Cycle 2 to guide the creation and implementation of a national digital literacy strategy and further partner with First Nations communities to collect data about digital skill and the ability to address opportunities for support.

Introduction

Effectively bridging Canada's digital disparity has been a long-standing issue since the early 2000s. Issues of connectivity and gaps in digital literacy have persisted across the country for decades, most notably for those in rural and Indigenous communities. This issue has long been acknowledged in reports issued by the federal government such as *The Digital Divide in Canada* and *Government On-Line*, released as early as 2002 (Sciadas 2002; Government of Canada 2006). This long-standing disparity, often referred to as the "digital divide," denotes the disproportionate access to digital technologies between populations, which is usually driven by disparate rates of internet access, differing levels of digital literacy and unequal degrees of digital participation in online platforms and services.

This gap replicates and reinforces broader educational, socio-economic and geographic inequalities, and further restricts access to opportunities in education, employment and the expansion of overall well-being as the world continues to digitalize. The effects of this digital divide only grow more pronounced in the wake of new disruptive technologies such as 5G and AI (artificial intelligence), making Canada's need to develop an inclusive national digital literacy strategy to engage all Canadians all the more dire.

This working paper will first provide a historical overview of Canada's digital divide, detailing how it has been tackled nationally since the early 2010s, and then move on to discussing the importance of building digital literacy. It will then conclude by looking toward policy responses made alongside broadband deployment abroad for potential lessons that Canada can draw upon.

What Canada's Digital Divide Looks Like

To fully understand the scope of Canada's digital divide, an overview of the history of digital access in the country is a useful starting point. First and foremost, connectivity gaps have been — and remain — the key issue needing to be actively addressed in Canada's digitally divided landscape.

To begin the work of closing this gap, Canada launched the Connecting Canadians program in 2014 that sought to advance connectivity in Canada's rural and remote regions, providing communities with download speeds of 5 megabits per second (Mbps).[1] In 2016, the Canadian Radio-Telecommunications Commission (CRTC), the country's federal telecommunications regulator, proclaimed that "internet access is a basic right" and raised the national minimum standard to 50/10 Mbps: 50 Mbps download and 10 Mbps upload. Still, at the time, Canada did not yet have a national broadband plan (Chung 2015).

In 2018, a report to Parliament entitled *Broadband Connectivity in Rural Canada: Overcoming the Digital Divide* was released, in which one main conclusion was a need

1 See www.canada.ca/en/news/archive/2014/07/connecting-canadians.html.

to facilitate and coordinate broadband deployment — that is, a high-speed, high-bandwidth internet connection — across Canada by involving all stakeholders under a national broadband strategy (House of Commons 2018, 35). This same report also posited that the strategy could be informed by a strategy for data collection and "address other concerns, such as digital literacy" (ibid.).

In response, the federal government launched the Universal Broadband Fund in late 2020 as Canada's first broadband strategy, aiming to connect 100 percent of Canadian communities to 50/10 Mbps service by the end of 2030.[2] What was absent in this strategy was a parallel mechanism to support and further develop digital literacy for all across the nation.

In an auditor general report to Canadian parliament released in 2023, the auditor general reported connectivity rates of 59.5 percent in rural and remote areas, and even lower rates of 42.9 percent on First Nations reserves (Office of the Auditor General of Canada 2023). The CRTC's 2025 Broadband Fund update shows improvements, with rural connectivity having risen to 80.5 percent, but challenges to access remain, especially when considering the high costs of connectivity and limited competition in rural and remote areas.

Tackling access alone, however, is not enough to solve the issue of the digital divide. Scholars such as Alexander JAM van Deursen and Jan AGM van Dijk (2019) have demonstrated that the digital divide operates across three interconnected levels: access, use and outcomes.

While a commendable start, Canada's broadband strategy shortsightedly tackles access, and can certainly do more for rural and Indigenous communities in the way of increasing informed use and maximizing beneficial outcomes. Understanding the interconnected nature of the three dimensions of the digital divide is essential for designing and guiding effective policy that meaningfully closes this gap.

Understanding the Levels of the Digital Divide: Access, Use and Outcomes

In the literature, the term "digital divide" has evolved over the last few decades to signify more than just the access divide between the digital "haves" and "have-nots." In 2022, Sophie Lythreatis, Sanjay Kumar Singh and Abdul-Nasser El-Kassar conducted a systematic review of the digital divide literature and found that the term "digital divide" gained popularity in policy-making contexts long before the phenomenon gained traction in academic studies in the late 1990s. Since then, the concept of the digital divide has taken on two more "levels," with the "second level" referring to inequalities in technical means and autonomy of use, and the "third level" placing a focus on the beneficial outcomes of using the internet and ICT (information and communication technology) (Lythreatis, Singh and El-Kassar 2).

2 See https://ised-isde.canada.ca/site/high-speed-internet-canada/en/universal-broadband-fund.

Van Deursen and van Dijk (2019, 354) note that a common opinion among policy makers is that: "the digital divide problem would be solved when a country's Internet connection rate reaches saturation, however, scholars of the second-level digital divide have concluded that the divides in Internet skills and type of use continue to expand even after physical access is universal." Krish Chetty et al. (2018, 3) demonstrate the literature's findings that the second level of the digital divide often persists "in conditions where ICT penetration is high" and for periods as long as five years, a gap signifying the amount of time between "gaining access to digital tools [and] becom[ing] proficient in [their] use."

This access-heavy definition of the digital divide can be seen on the CRTC's About the Broadband Fund website, where the issue of the digital divide is directly linked to tackling the explicit policy problem of broadband expansion, with no mention of the digital divide at its second and third levels.[3] This view of the digital divide is deficient, however, as addressing access solves only the first level of this phenomenon in the communities it aims to support.

While the expansion of broadband access across the country is undoubtably a net positive for communities newly gaining access to the internet, focusing solely on solving the access component of the digital divide does not guarantee an informed use of ICT, nor does it even guarantee beneficial outcomes; as Lythreatis, Singh and El-Kassar (2022, 2) posit: "it cannot be assumed that access to and the use of technology automatically provide all the benefits of the technology."

What Is Digital Literacy?

As noted in the literature, there is no single standardized definition for digital literacy (Chetty et al. 2018). This paper will use the United Nations Educational, Scientific and Cultural Organization's definition of digital literacy as: "the ability to access, manage, understand, integrate, communicate, evaluate and create information safely and appropriately through digital technologies for employment, decent jobs and entrepreneurship."[4] While this definition is broad, it acknowledges the importance of understanding and safely using ICT for parsing, relaying and leveraging information for better outcomes.

There is a notable gap in coordinated efforts from all levels of government in Canada to make digital literacy a priority for rural and Indigenous communities (Klyne 2023). As previously mentioned, existing grey literature on this topic in Canada tends to focus primarily on the infrastructural aspects of the digital divide. But discussions that tackle the complementary role of digital literacy in winnowing the divide — particularly those targeting individuals in rural, remote and Indigenous communities — are crucially absent. This represents a significant problem for addressing the broader impacts of the digital divide through policy.

3 See https://crtc.gc.ca/eng/internet/fnds.htm.

4 See https://databrowser.uis.unesco.org/resources/glossary/3225.

National Digital Literacy Policy in Canada

While there is no entity solely responsible for digital literacy policy at the federal level, the main federal actors providing funding and programming to increase digital literacy and digital skills development across Canada are Innovation, Science and Economic Development Canada (ISED) and Employment and Social Development Canada (ESDC).

A scan of ISED's digital inclusion programs for Canadians lists the following programs: CanCode, Digital Skills for Youth, Computers for Schools Intern program, Computers for Schools Plus and the Connecting Families initiative. Many of these programs are delivered by ISED but funded by the Youth Employment and Skills Strategy, a horizontal initiative led by ESDC (ESDC 2024). It is clear, by and large, that these digital inclusion programs are not designed to target all Canadians, but rather those under 30, leaving roughly 65 percent of all Canadians out of scope (Statistics Canada 2025).

Canada's Digital Literacy Exchange Program

To date, there has been only one federal initiative that has aimed to address the second and third levels of the digital divide for learners of all ages through digital literacy: the Digital Literacy Exchange Program (DLEP). Launching in 2017, the DLEP funded various community organizations across the country to deliver skills training to underrepresented groups, including persons with disabilities, individuals with low-income, individuals who had not completed high school, residents of rural and remote areas, Indigenous people, and individuals aged 65 or older (ISED 2021, 6).

When the DLEP launched, there was high demand to participate in the program, but due to funding constraints, only 36 of 151 applications were approved (ibid., 21). According to its formal program evaluation, the DLEP was meant to complement other government programs aimed at improving broadband access as well as the affordability of the internet and devices, addressing a "need for ongoing access to digital literacy training to ensure that all Canadians can keep up with the pace of technological change" (ibid., 23).

As part of the program, ISED's selected recipients carried out training programs for learners and instructors, the majority being in-person, which sought to increase digital literacy through agile training that could meet the flexible needs of the communities that the DLEP served. The funding recipients were mostly NPOs (non-profit organizations), community-based organizations and libraries. In the short term, the programs they ran aimed to increase confidence and skills in using ICT and the internet, ultimately seeking to endow participants with the ability to be more proficient independent actors in the digital economy and in digitally engaged society.

Despite the demand for and overwhelming success of the DLEP, which was extended three years past its initial sunset date of 2022, this time-limited initiative ended in March 2025, with no clear plans for a successor program.

Researchers have stressed that Canada should consistently fund adult education programs to meaningfully address digital inequalities and that without stable funding, digital literacy initiatives remain vulnerable to shifting political priorities (Sturm 2024).

Valérie Kindarji and Wendy H. Wong (2023) contend that "one way to incorporate disruptive technologies is to provide citizens with the knowledge and tools they need to cope with these innovations in their daily lives…[and so] we should be advocating for widespread investment in digital literacy programs." The authors also point out that these initiatives, and education policy writ-large, live between multiple jurisdictions and within a patchy framework of digital literacy programs, which further complicates course delivery and access.

A national digital literacy strategy would simplify and better co-ordinate efforts across jurisdictions in addressing the digital divide.

AI: Adding Another Layer to the Digital Divide

The next hurdle for Canada in terms of digitalization is ensuring that its citizens are supported in working toward gaining proficiency in rapidly evolving AI technologies. A recent study of 47 countries by KPMG found that Canada ranks 44th in AI training due to low levels of understanding and trust in this emergent technology (KPMG 2025).

As AI-enabled tools become more widespread across workplaces and online environments, effective AI training is contingent upon individuals first possessing core digital literacy skills that provide the necessary context for understanding and using AI (Du and Turner Lee 2025). A national digital literacy strategy can pave the way toward the responsible adoption of AI across Canada so that users feel better equipped to deploy this technology for increased productivity in routine tasks and problem solving.

Leveraging Data to Advance Digital Literacy

A starting point for assessing Canadians' digital literacy and ability to leverage ICT for beneficial outcomes should be the Organisation for Economic Co-operation and Development's (OECD's) Programme for International Assessment of Adult Competencies' (PIAAC's) Survey of Adult Skills. Administered at the international level every 10 years, PIAAC partners with ESDC, Statistics Canada and the Council of Ministers of Education, Canada (CMEC) in Canada to assess the literacy, numeracy and adaptive problem-solving skills of individuals aged 16 to 65 in the only national-level evaluation of adult skills (Statistics Canada 2024a; CMEC 2023, 24). The 2023 PIAAC survey in Canada revealed that 22 percent of adults scored at or below the lowest level in adaptive problem solving, meaning that they are only capable of solving very simple, often one-step problems (OECD 2024).

According to data from Statistics Canada, 49 percent of Canadians scored at level two or lower on the Survey of Adult Skills (Statistics Canada 2024b). This is significant as ESDC and Decoda, a literacy NPO based out of British Columbia, both maintain that level three is "generally the threshold required to compete in a knowledge-based economy" (ESDC 2023, 26; Decoda Literacy Solutions 2025).

It is also important to note that crucial segments of the population were not included in this most recent round of the Survey of Adult Skills, namely, persons living on reserves and Indigenous settlements and individuals residing in the three Canadian territories (Statistics Canada 2024c). Efforts would need to be made to survey digital competencies in these particular communities and to collect more granular data to contribute toward a more fulsome understanding of the levels of digital proficiency in Canada.

This data could have immense value for increasing digital literacy in Canada. If combined with data from the Survey of Adult Skills — and then further disaggregated by Statistics Canada, ISED and ESDC — it could be used to identify sub-populations for whom there is a greater need for digital literacy training. Collaborations with relevant community entities and sub-national ministries could then develop targeted digital literacy programs and training.

Looking Abroad

While many jurisdictions across Canada aim to increase broadband expansion in the country as the primary solution for the digital divide, international examples offer the added value of pairing broadband deployment with strong digital literacy initiatives. This section will look to two examples: first to New Zealand for its efforts in advancing digital literacy for all, including the Māori people, and then to the Republic of Ireland for its efforts in tackling digital literacy for its large rural population.

New Zealand

In September 2022, New Zealand released the report *The Digital Strategy for Aotearoa*, which is anchored in three themes: *mahi tika* or trust, *mahi tahi* or inclusion, and *mahi ake* or growth. The digital strategy is underpinned by these Māori concepts, and positions the Māori people as equal partners in shaping New Zealand's digital future. Moving past increased access to connectivity, the digital strategy for Aotearoa emphasizes digital literacy and skills development along the lifespan and includes community-based and senior-focused initiatives to address the second- and third-level digital divides (New Zealand Government 2022).

For Canada, New Zealand's strategy can help illustrate the value of anchoring a future national digital literacy strategy in Indigenous partnership and lifelong learning in order to better equip communities for continued technological change, rather than relying on the assumption that connectivity alone will lead to equitable digital participation and an increase in beneficial outcomes.

Republic of Ireland

In 2022, Ireland launched its digital strategy in the report, *Harnessing Digital — The Digital Ireland Framework*. This framework is built around four dimensions: digital transformation of business, digital infrastructure, skills, and digitalization of public services. A defining feature of Ireland's effort to increase digital literacy in the country is its approach to skills development via a lifelong learning model, which builds digital skills development across the entire education and training continuum; through grade school, higher education and adult and community training, citizens of Ireland are able to build on their existing skills in a way that responds to technological change and shifting labour market needs (Government of Ireland 2022, 25).

In support of Ireland's broadband rollout to its rural areas, where 35 percent of Ireland's population lives, the country has identified 300 broadband connection points (BCPs) that will receive priority access in communities, serving as digital hubs until fibre-to-the-home networks can be fully built out. Housed in community centres, sports clubs and libraries, BCPs are intended to provide locals with opportunities to come together prior to being individually connected in locales where they can find support with digital skills training and access digital literacy courses, offered in collaboration with public and private sector partners (ibid., 30).

Following Ireland's example, Canada could leverage connecting community hubs across the country where broadband deployment is underway to incentivize individuals to regroup in their communities and engage with digital literacy programming.

Conclusion

Although Canada has historically attempted to close the digital divide by placing a strong emphasis on increasing access to broadband, more needs to be done in order to ensure that newly connected communities, majoritarily rural and Indigenous, are able to leverage new internet access for more informed uses and better outcomes for overall well-being.

As seen in New Zealand and the Republic of Ireland, digital strategies that bring communities together by emphasizing inclusion within lifelong digital learning outcomes can serve as lessons for Canada, especially when it comes to contending with disruptive and emerging technologies such as AI. As the challenge of upskilling in the face of emerging technologies will inevitably persist for as long as technology continues to evolve, an inclusive national digital literacy strategy is a good starting point to ensure that Canadians remain digitally competent.

Recommendations

- **Recommendation 1:** Canada should establish a national digital literacy strategy that connects individuals with various actors for learning.
- **Recommendation 2:** Canada's national digital literacy strategy for Canada should have a long-term orientation, with ongoing funding seeking to support both youth and lifelong learners.
- **Recommendation 3:** Canada should leverage existing data sets on digital literacy and conduct further research into the digital literacy levels in partnership with First Nations communities and in Canada's territories.

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Acronyms and Abbreviations

AI	artificial intelligence
BCPs	broadband connection points
CMEC	Council of Ministers of Education, Canada
CRTC	Canadian Radio-Telecommunications Commission
DLEP	Digital Literacy Exchange Program
ESDC	Employment and Social Development Canada
ICT	information and communication technology
ISED	Innovation, Science and Economic Development Canada
Mbps	megabits per second
NPOs	non-profit organizations
OECD	Organisation for Economic Co-operation and Development
PIAAC	Programme for the International Assessment of Adult Competencies

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