



Barriers to Digital Literacy

The consultation document recognizes that for Canada to become a leader in the digital economy, digital skills development must be fostered in all Canadians, so that they have the capacity to access, use, and interpret a growing and increasingly complex range of digital information. It also recognizes that a digital skills divide is emerging, where some groups have less access to new technology and are falling behind in digital skills.

The aim of this chapter is to set out the main social, economic, geographic, and demographic barriers that exist to universal digital literacy in Canada today. It complements the conceptual framework presented in the previous section by providing a concrete response to the discussion question, “What do you see as the most critical challenges in skills development for a digital economy?”

Implementation of a successful strategy for the development of digital literacy must have multiple components that address the various barriers specific to different demographics.

There are multiple barriers to literacy: attitude, age, socio-economic status, language, and regional availability of resources. Strategies to increase literacy levels must account for these different barriers and, where necessary, implement targeted programs for specific situations.

Age Misconceptions

There is no denying the discrepancy in Internet use based on age: in 2009, 98 per cent of Canadians ages 16-24 were online, compared to 66 per cent of those aged 45 or older.⁹ At the same time, it is important to note that the older age group accounted for 60 per cent of new Internet users – which presents opportunities for cultivating digital literacy skills.

In the past, distinctions between users of technology were made purely along the lines of age. Most notably Mark Prensky, in his paper *Digital Natives, Digital Immigrants*,¹⁰ argued that those born in to the era of computing had a natural advantage in using technology, as opposed to those who were born earlier and adopted technology at a later age. Prensky’s distinction has increasingly come under attack mainly because it implies that the digital native is born into a computer culture and does not have to learn any skills to successfully adapt to both the benefits and risks of the digital age. It also suggests fluency with technology that not all children and young adults have, and a corresponding clumsiness and unfamiliarity with digital technology that not all older people display. Moreover, this distinction is not particularly useful because as with any medium of communication – whether it be writing or reading or speaking – an individual must still acquire the necessary skills in order to use digital media technologies effectively. There is too much diversity within an entire generation to simply categorize it as being naturally digitally savvy.

9. Statistics Canada Internet Usage Survey (May 2010). <http://www.statcan.gc.ca/daily-quotidien/100510/dq100510a-eng.htm>

10. From *On the Horizon*, (MCB University Press (Vol. 9 No. 5, October 2001)).

The argument against the de facto existence of a generation of digitally fluent youth is supported by research into how young people use digital media. A recent survey of 4,374 students across 13 institutions revealed that the majority of them own computers (93.4%) and use them for word processing (99.5%), e-mail (99.5%) and web browsing (99.5%). But, the researchers found that only a minority of the students (21%) were engaged in creating their own multi-media content.¹¹ This evidence suggests that assumptions about this generation of “digital natives” are misguided.

More importantly though, simply because someone knows how to use a software program or an electronic communications device does not mean they fully understand the context within which it operates or the content it may be capable of producing. Employing the distinction of digital native and digital immigrant suggests an abdication of responsibility of the older generation toward the younger generation in terms of education; it is a decidedly unhelpful concept when considering the penchant of youth to use technology without considering its personal or social implications, ethics, or risks.

Rather than focusing on “natives” or “immigrants”, *The Report of the Digital Britain Media Literacy Working Group* has developed strategies for strengthening digital literacy levels based on a series of attitudinal archetypes: Engaged, Economisers, Pragmatists, Hesitants, and Resisters.¹² As illustrated in Annex D, attitudinal differentiation provides a richer canvas for us to understand the complexities of implementing digital literacy programs and the specific and diverse types of initiatives necessary to increase literacy levels.

Geography

Canada is a vast landmass, with a few large urban centers along its southern border with the United States and many small towns scattered amongst rough terrain. The two main issues that rural Canada must conquer regarding digital literacy are barriers of access and attitude. The culture of rural Canada and the cost and difficulty in building digital infrastructure to serve these communities pose significant obstacles to Internet adoption. The issue of access is one of infrastructure, with broadband connectivity in rural areas a clear driver of use.¹³ But deploying more infrastructure is not enough to bridge the digital divide between rural and urban Canada. When one analyzes Internet usage models that account for all other factors such as income levels, education, and age, “rurality, is still a significant determinant in and of itself.”¹⁴

Even with an increase in infrastructure, further efforts are needed to support digital literacy in rural environments because, unlike their urban counterparts, the economies of rural and remote communities are not typically supported by information-technologies. Moreover, as broadband infrastructure proliferates, the digital divide goes beyond access and connectedness to include second level usage divides relating to cultural attitudes and levels of education.¹⁵ The Organisation for Economic Co-operation and Development report on *Broadband and ICT Access and Use by Households and Individuals* describes “the Internet [as] a media, a window open to the world, and as

11. Benne et. al. *The ‘digital natives’ debate: A critical review of the evidence* (2010), p. 3.

12. Section 5.6. An alternative attitudinal breakdown used by the FCC in the report on Broadband Adoption and Use in America (pg. 6) is Digitally Distant, Digital Hopefuls, Digitally Uncomfortable, Near Converts. The age and types of barriers to adoption are similar to the categories and analysis we use above.

13. Statistics Canada. *Factors Associated With Internet Use: Does Rurality Matter?* (September 2007), p. 9.

14. Ibid.

15. OECD Broadband and ICT Access and Use By Households and Individuals, p. 37.



such, implies a complex interaction with the user which goes beyond the tool itself.”¹⁶ This complexity of interaction supports the argument that digital literacy initiatives must address particular cultural influences and attitudes as well as pervasive geographical barriers to broadband deployment if our goal is to provide universal Internet access for all Canadians.

An interesting example of digital literacy initiatives targeting rural communities can be found in Australia, where a series of programs led by various levels of government has been designed to meet the unique needs of rural populations.¹⁷ One such program has been the establishment of community technology centers, which act as the main avenue for providing local training and service delivery. The centers use technology as a platform for many community events, projects, and educational programs. Services offered include the provision of communication infrastructure such as broadband Internet, e-mail videoconferencing and other online services, education and training, technical support, computer maintenance, and online government solutions for all tiers of government.¹⁸

In a Canadian context, a similar approach is necessary. In conjunction with the deployment of broadband infrastructure, other measures – such as digital skill building programs and additional communications infrastructure – are required to ensure that when rural communities are connected, they have the resources to effectively use broadband technology. The establishment of community technology centers in rural Canada would provide the necessary resources to support and motivate those who may be hesitant to use digital technology and enable them to participate more fully in the social and economic benefits afforded by access to broadband infrastructure. These centres would also facilitate further participation in digital culture for engaged users.

Socio-Economic

Socio-economic factors are the most significant barriers to digital literacy; indeed the socio-economic digital divide is unquestionably significant in Canada. The *Internet Usage Study* from Statistics Canada reports that 94 per cent of individuals in the top income quintile (more than \$85,000 per annum) used the Internet while only 56 per cent of individuals in the lowest quintile (less than \$30,000 per annum) report Internet use.¹⁹ Similarly, the February 2010 Federal Communications Commission report on broadband adoption and use in America cites cost as a main factor for not having a high-speed Internet connection.²⁰

Providing access to broadband for lower income groups is only the first step toward digital engagement. It is not enough to simply provide the technical resources for lower socio-economic groups: we must also provide complementary resources to support literacy. These resources could be in the form of classes, and text-based and audio-visual materials, with classes and materials delivered online as well as in schools, libraries, and community centers.

An example Canadians might well consider is the recommendation of the recent FCC National Broadband report calling for the establishment of a Digital Literacy Corps, a publicly funded initiative modeled after President John F. Kennedy's Peace Corps, to educate minority, rural, and other disadvantaged citizens on the use and importance of computers and Internet services. The proposed Digital Literacy Corps would also provide skills training and

16. Ibid.

17. Audit of Australian digital media literacy programs p. 2.

18. Ibid p.4.

19. Statistics Canada Internet Usage Study. (May 2010). <http://www.statcan.gc.ca/daily-quotidien/100510/dq100510a-eng.htm>

20. Thirty-five per cent of non-adopters cite cost as the reason. Fifteen per cent say it is the price of a monthly subscription, ten per cent say it is the cost of a computer. *Broadband Adoption in America* (February 2010), p. 5.

outreach in neighbourhoods with low rates of broadband adoption and train workers at libraries and community centers on Internet basics so they too can provide digital literacy training.

“INDIGENOUS COMMUNITIES: While Indigenous communities face many of the same issues as rural communities and those who are socially and economically disadvantaged, their unique cultural context and existing literacy level challenges must also be taken in to consideration when developing digital literacy programs. Once again, Canada can learn from Australia which has developed programs designed specifically for Indigenous communities. These programs focus on equipping communities and schools with the technology and skills necessary for effective use of digital media and communications.²¹ Often these programs overlap with the Community Technology Centers of rural communities.”

Bilingualism

There is no doubt that the Internet is dominated by the English language. On the surface, this fact does not bode well for the promotion of Canada’s other official language French, and it has been observed that monolingual French-speaking Canadians use the Internet less than their bilingual counterparts.²² However, as innovative technological solutions are developed this situation may not be long-term. With the advancement of translation services like Google Translate²³ that translate entire websites with a few clicks, the challenges of multi-language comprehension will continue to diminish.

Nonetheless, we must develop effective French language digital literacy programs specifically targeted for Francophone Canadians to ensure they have access to knowledge and skills to use, understand, and create with digital media tools.

“From 1998 to 2008, the Franccommunautés virtuelles Program at Industry Canada allocated funding to Francophone and Acadian organizations to develop French-language content, applications, and services on the Internet, and to encourage the development and use of ICTs in their communities. During that time 46 websites were created, along with French-language content for a further 203 sites, and more than 3,000 people received ICT training. Best practices from this program could be emulated and built upon.”²⁴

21. Audit of Australian digital media literacy programs. (July 2009), p. 16.

22. Gandal, Neil, The Effect of Native Language on Internet Usage (November 2002). CEPR Discussion Paper No. 3633. Available at SSRN: <http://ssrn.com/abstract=359620>

23. <http://translate.google.com>

24. Industry Canada, Final Evaluation of the *Francommunautés Virtuelles* Program, 2008.



We can also recognize the enormous opportunity digital media present for maintaining language use and preserving cultural heritage. For example, the read/write functionality of Web 2.0 social media has already accounted for an increase in Internet usage in French-speaking Canada. Digital media also offers a tremendous opportunity²⁵ for the easy production, distribution, and consumption of French language content. As David Crystal points out in his book *Language Death*,²⁶ an endangered language will make forward strides if its speakers can make use of electronic technology. Promoting digital literacy is central to maximizing the opportunity presented by user-generated content to strengthen French language content and use. It is the third element of digital literacy – the ability to create – that is essential for French-speaking digital media users.

It is also clear that the power of the read/write web extends to benefits for Canada's immigrant population. Digital literacy amongst new Canadians enables them to both engage further in Canadian society and actively preserve their native languages and cultures.

25. Cunliffe, Daniel. Hypermedia Research Unit, School of Computing, University of Glamorgan, Pontypridd, Wales, UK. *Promoting minority language use on bilingual Websites*. "It can be argued that the presence of a minority language in this new mass medium will become as important to language survival as having a presence in traditional mass media." p. 2.

26. Crystal, David (2000), p. 141.