



Treasure Mountain Canada 2014

**Myths, Realities and Opportunities:
What the Research Says about Digital Literacy**

Anita Brooks Kirkland

Consultant, Libraries & Learning
President (2014), Ontario Library Association

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At Treasure Mountain Canada 2010 we explored the seeming narrowing of the [digital divide, and the emergence of the digital learning divide](#) (Brooks Kirkland, 2010). The paper explored challenges of infrastructure, teacher education, and overcoming the mythologies of fear and caution that have burdened schools as we explore effective ways to leverage technology for learning. The paper challenged teacher-librarians to take a leadership role in bridging the new digital learning divide. In the years since the 2010 symposium a large body of research has emerged to give deeper insight into what technology young people have access to, and associated cultural practices that have evolved in their networked world. This new research challenges some popularly held assumptions about how teens use technology. The research largely debunks the myth of the digital native, and demonstrates that what educators do with technology matters to students' digital learning literacy and civic engagement.

This paper synthesizes the relevant findings of new research from Canada and the United States pertaining to the digital divide and youth digital literacy. It explores research on teachers' attitudes and competencies related to their own digital literacy and their attitudes towards technology integration in school, and finally explores new opportunities in the learning commons to optimize approaches to digital literacy. The aim is to move past the harmful platitudes and mythologies that have characterized much of the discourse about youth in a networked world, and provide a framework for understanding authentic and powerful opportunities for collaborative, networked learning.

The Digital Literacy Divide: Global Picture

While the digital divide as we have understood it – access to hardware and networks – may have narrowed, the digital literacy divide has become entrenched in society, and is not restricted to children and youth. As digital literacy becomes more and more essential for access to government services, civic participation and employment, there is increasing concern about levels of digital literacy in the adult population in Canada and across the world. Research from the *Organisation for Economic Co-operation and Development* (OECD) shows a strong correlation between general literacy skills and digital literacy skills in both the youth and adult populations of Canada and other countries surveyed. ([Wyckoff, 2014](#)). The OECD's *Programme for the International Assessment of Adult Competencies* (PIAAC) survey of 2013 concluded that two thirds of people surveyed in the thirty-three participating countries lack the skills to succeed in technology-rich environments. ([Wyckoff, 2014](#)).

Much depends on young Canadians having sophisticated digital literacy and skills: their health and well-being, their understanding of the world around them, their adult economic outcomes, and their ability to contribute to society in significant and meaningful ways. In turn, the broader Canadian society has an obvious stake in this success. Digital literacy and skills are essential to our continued national prosperity. To maximize these benefits, however, a cohesive and informed approach to cultivating these skills is necessary.

(Framing Document., Youth and Digital Skills Symposium, ICTC & MediaSmarts, 2014)

The Digital Lives of Canada's Youth

“Digital natives; tech savvy; narcissistic; innovative; mean. There are a lot of assumptions out there about kids online, but the labels are often misleading and out of step with what students are actually doing with networked technologies.” So says the introduction to [Life Online](#), the

first in a series of reports summarizing the findings of the third phase of MediaSmart's [Young Canadians in a Wired World project](#) (YCWW), a comprehensive longitudinal survey assessing the digital competencies of students from grades 4 to 11 from across Canada. This most recent survey ([YCWW Phase III](#)) provides some interesting insights into teen competencies that fly in the face of many of the assumptions and generalizations that have characterized much discourse over the past several years.

Almost every student surveyed has access to the Internet outside of school, but six percent still rely on a public libraries and community centres for access. Portable devices are used more than desktop computers, with cell phones and smart phones being the primary devices for access. Older teens are far more likely to own mobile phones than younger students.

Creative uses of digital media, such as posting homemade videos or mash-ups are still relatively uncommon. Participatory civic uses are also relatively low. Seventy-eight percent of students say they use the Internet to find information about news, health issues and relationships. Online media are used primarily for entertainment and communicating with friends and family. Canadian youth, even in the younger grades, like to socialize online.

When asked to name their favourite websites, predominant themes are online videos, gaming and social networking, with the top three preferred sites being YouTube, Facebook and Google, in that order.

Contrary to Popular Belief, Students Care about Privacy

MediaSmarts reports that while young people are mostly willing to post information about themselves online, they have very clear ideas about who should and should not be able to see what they post. MediaSmarts concludes that while young people are very social online, being social does not mean the same thing as sharing. "Students are very proactive about curating their online persona and controlling content that they don't want certain audiences to see – and a number of social norms have emerged around expectations regarding what friends share, and don't share about their friends online." Audiences matter to the students surveyed, and controlling their audience influences most decisions around privacy. While students have developed a number of strategies to protect their privacy in this online social context, they have very limited understanding of data privacy issues. MediaSmarts makes a call for more effective education in this area. ([MediaSmarts, 2014](#)).

American researcher Danah Boyd has conducted extensive interviews with teens from across the United States about their social lives online. The results and conclusions drawn by MediaSmarts in Canada are mostly consistent with Boyd's research in the United States. With her book, [It's complicated: The social lives of networked teens](#) (2014), Boyd seeks to help parents, educators and others concerned about teenagers to understand the real dynamics of teens' online lives, putting that understanding firmly within the context of human social development, and dispelling some of the fears held by parents and teachers. Boyd provokes deeper discussion about authentic issues. "If I have learned one thing from my research, it's this: social media services like Facebook and Twitter are providing teens with new opportunities to participate in public life, and this, more than anything else, is what concerns many anxious adults." (Boyd, 2014).

Perceptions and Realities about Cyberbullying

“How big a problem is cyberbullying? Judging by media coverage, which frequently focuses on the most sensational and extreme cases, it’s an epidemic and schools and legislators have often responded with heavy-handed measures. Students, on the other hand, often say that cyberbullying is less of an issue than most adults perceive it to be – though even they, in many cases, overestimate how common it is.” So concludes [MediaSmart’s YCWW Phase III report \(2014\)](#), based on extensive data on the complex behaviours often cited as contributing to online meanness and cyberbullying. MediaSmarts found that online meanness “is often less an attack of a ‘bully’ against a ‘victim’ than it is an ongoing part of the relational conflicts that arise as part of the drama of teen life.”

In school, teens observe how students broker attention with respect to classmates and teachers and start drama to negotiate power and status. Meanwhile, at home, teens often hear their parents gossip about work, neighbors, and family. While society derides attention, gossip, and drama, teens also receive clear cultural signals that these behaviors are normal.

Danah Boyd (2014). *It's complicated: The social life of networked teens.*

These conclusions are corroborated by Boyd’s research in the United States. Boyd (2014) cites the most widely accepted definition of bullying from Swedish psychologist Dan Olweus. The three components of bullying are aggression, repetition, and imbalance of power. While there may be many forms of youth aggression, all three components must be present to define it as bullying. Boyd concludes that while varying forms of aggression and “teen drama” may be hurtful, using cyberbullying as an umbrella term for all behaviours is harmful. “During my fieldwork, I met parents who saw every act of teasing as bullying, even when their children did not. At the other extreme, news media has taken to describing serious criminal acts of aggression by teens as bullying rather than using terms like stalking, harassment, or abuse. Ironically, teens often use the term bullying to refer to the kinds of incidents that Olweus described while adults and news media use the term far more loosely.” (Boyd, 2014).

MediaSmarts and Boyd delve far more deeply into the issues and perceptions about cyberbullying, challenging popular and counterproductive beliefs. Clearly this research should be used to inform any authentic and meaningful education initiatives related to digital citizenship.

The Digital Literacy Divide

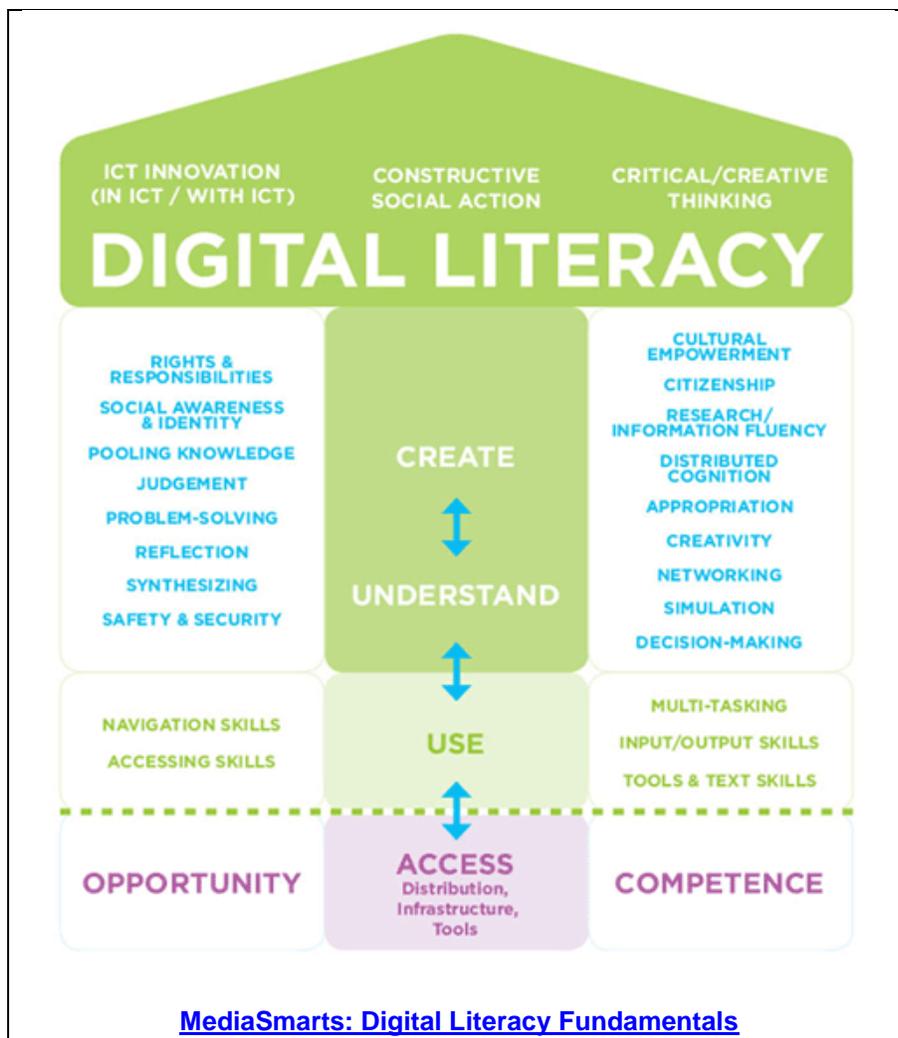
While MediaSmarts’ data reports disparities in the way teens access the Internet and interact online, Boyd concludes that economic inequality still plays a central role in the digital divide in terms of quality of access, but also in terms of digital literacy. “Technical skills, media literacy, and even basic English literacy all shape how teens experience new technologies. Some teens are learning about technology from their parents while other teens are teaching their parents how to construct a search query or fill out a job application.” (Boyd, 2014). Boyd’s research is grounded in the sociology of the United States, but certainly there are some similarities to the situation in Canada, as demonstrated once again by the MediaSmarts YCWW Part III study.

MediaSmarts provides [extensive online resources on digital literacy](#) for educators and parents, and organize the conclusions from their related research in the YCWW Phase III

under their own established categories for digital literacy: use, understanding and creation. We have already looked at the findings related to how students actually use technology, and found out that some uses are more sophisticated than most might have presumed. Teens have learned to do what is most authentic to their needs: social interaction and entertainment. “The activities suggest that students may be more motivated to acquire advanced technical skills when doing so provides them with a direct benefit that affects them personally or socially.” ([MediaSmarts, 2014](#)).

Clearly if students were to find a similarly authentic use of technology in school, their digital literacy for learning would deepen. Instructional approaches to digital literacy and digital citizenship must be informed by the current research to be useful to meaningful student learning and consequent deepening of digital learning literacy. The challenge for educators, then, is to understand the real needs and opportunities, recognize and overcome their own biases, and explore ways to learn with their students using networked digital technology.

The MediaSmarts study gave a mixed assessment of students’ skills for understanding contexts and evaluating content. Most students at least attempted to verify information obtained online, again, more so when motivated by possible immediate consequences, including improved marks and pleasing friends. Students demonstrated limited



knowledge of the commercial aspects of the web sites and services that they used. There was low awareness of the information and digital ethics around copyright, illegal downloading, and using technology to cheat.

The MediaSmarts survey did not attempt to assess the quality of students’ digital creations, but rather the more fundamental question as to whether and how frequently they were using technology at all for creative purposes. The majority of students did indeed create at a basic level, posting comments or photographs on social media sites, but almost exclusively for social purposes. The vast majority of students post other creative content infrequently or not

at all. Only a small percentage of students participate in public debate or social activism online.

Students Want to Learn

When asked what they wanted to learn in school, students in the YCWW Phase III survey were most interested in learning how to verify online information. They wanted to learn about what is legal and what is illegal to do online. They wanted to learn about how companies collect and use personal information, how to search online, and how to use privacy settings. The survey found that they are not receiving this critical instruction consistently in school. “The number of students who had learned digital literacy skills at school was nearly constant across grades, suggesting that these skills have not yet found a place in the curriculum and, when they are taught, occurs as the one-off rather than part of a larger digital literacy framework.”

(MediaSmarts, 2014). Relatively few students are able to use portable digital devices at school, and when they are, they are mainly used for traditional classroom exercises. “This means that there is less exposure to

collaborative work and communication with others in the community, both of which are central features of the *Understand* competencies of digital literacy.” Clearly, these findings represent a huge opportunity for leadership from the library learning commons, and evidence to inform advocacy in this regard.

Technology can only enhance learning if students are taught to think critically about online content and to evaluate their own behaviour against a set of shared social values. Digital literacy is not about technical proficiency, but about developing the critical thinking skills that are central to lifelong learning and citizenship. To meet the challenge, schools must focus on pedagogy, and provide training and support to help teachers incorporate technologies into all elements of the curriculum in ways that facilitate individualized learning and teach students how to collaborate with learners both within and outside the school community.

MediaSmarts (2012). YCWW Phase III, Teachers' Perspectives.

Teachers' Perceptions of Digital Literacy

Advancing the learning community in the school includes leadership within the community of teachers. Two years ago, MediaSmarts conducted a study with a limited sample of exemplary teachers ([MediaSmarts, 2012](#)). These teachers observed that students' access to technology does not necessary translate into being better learners. They identified teaching styles and technologies that limited rather than enhanced learning, because they were based on questionable pedagogy. They reflected on ways in which networked technologies can enhance learning, including better and improved access to resources, communicating with others outside the classroom, opportunities for collaboration, and differentiation. They made astute observations about what is needed to maximize the benefits of technology within the larger context of learning, based on shared social values and sound pedagogy.

The Pew Internet & American Life Project conducted a similar survey of teachers in the United States entitled [How Teens Do Research in the Digital World](#) (Pew Internet, 2012). While 75% of teachers surveyed agreed that the Internet and digital search tools have had a mostly positive effect on students' research habits, they commented on emerging concerns. These included students' overdependence on search engines, difficulty judging the quality of online information, ease of “borrowing” others' work, and low use of reliable sources like online databases, news organizations and print resources.

The National Writing Project and Pew Internet partnered on a survey of Advanced Placement teachers and teachers participating in the National Writing Project ([PEW Internet, 2013](#)). One third of the participating teachers had received extensive training in how to teach writing effectively in a digital environment. Teachers in this survey also observed deficiencies in students' online research habits, remarking that they often "equate research with Googling", and have difficulty assessing the quality of information they find online. Yet 90% of these same teachers name Google as their preferred and essential research tool. Similarly, these teachers use Wikipedia at a much higher rate than the average American adult, yet focus groups in the study noted that they often discourage or bar students from using Wikipedia because of concerns about the reliability of its content.

These teachers' lack of insight into the possibilities for learning about the social construction of knowledge through Wikipedia to enrich digital literacy ([Brooks Kirkland, 2012](#)) is eclipsed by their lack of confidence in their own facility with technology. Despite outpacing the general adult population in almost all areas of technology use, almost half believed that their students knew more about technology than they did. A small minority believed that they knew more than their students. (Pew Internet, 2013).

Debunking the Myth of the Digital Native

We can clearly conclude from this body of research that while today's students may have facility for using technology that does not necessarily translate into its more advanced and literate use. Teachers' own lack of knowledge and self-confidence is perhaps more a symptom of the mythology of the digital native / digital immigrant paradigm so prevalent in today's public consciousness. Boyd (2014) suggests that not disputing the popular fears and platitudes about youth and technology is inherently regressive.

"I believe that the digital natives rhetoric is worse than inaccurate: it is dangerous. Because of how society has politicized this language, it allows some to eschew responsibility for helping youth and adults navigate a networked world. If we view skills and knowledge as inherently generational, then organized efforts to achieve needed forms of literacy are unnecessary. In other words, a focus on today's youth as digital natives presumes that all we as a society need to do is be patient and wait for a generation of these digital wunderkinds to grow up. A laissez-faire attitude is unlikely to eradicate the inequalities that continue to emerge. Likewise, these attitudes will not empower average youth to be more sophisticated Internet participants."

Moving Forward

We have discovered the sophistication of technology learning that can take place through social motivation. The most innovative changes may, however, be happening outside of school. Although still in the minority, there are a growing number of young people collaborating for creative purposes online, driven by shared passion. Engagement in writing and other creative tasks and the benefits of collaboration mean these young people can produce very sophisticated creative works. The challenge is to foster learning in school that is similarly connected, equitable, social and participatory, leveraging networked technology for learning. (Eidman-Aadahl, 2014).

Attitudes within the education community are shifting, and there is more energy than ever before for effecting change. Networked communities of engaged teachers are growing, and they are leading change within large education institutions. More than ever before, these teachers' use of technology for learning is driven by good pedagogy, using new models for teaching competencies and for assessing the richness of technology tasks. ([Brooks Kirkland, 2014](#)). Leading educational theorist Michael Fullan includes meaningful, pedagogy-driven use of technology as part of his vision document for Ontario's educational future ([Fullan, 2013](#)). There is definitely a shift taking place, and a clear opportunity for leadership from the learning commons.

And the third thing I think of is the opportunity actually to link those computers together to collaborate among people, to create ever more sophisticated maps of content, pieces of content, to build knowledge together, even if actually we've never met and may never meet. All of these things have very low barriers of entry. So, actually, these things, which just a few years ago could only be done by professionals after long periods of apprenticeship with really expensive equipment, now can be done by anybody. They can be done by children. They can be done by adults. They can be done in school or out of school. So, the capacity to be able to do ever-more sophisticated writing at ever-younger ages, it's just there. It's just in front of us.

Elyse Eidman-Aadahl (2013). *Writing in the Digital Age*.

The Perfect Storm

Technology for learning is a cornerstone of the school library program, and the collaborative nature of learning in the learning commons model is a natural match for networked learning integrating technology. The challenge is, of course, to embrace the opportunity, challenge the stereotypes and fears, and be willing and open to modeling learning with and about technology. An overwhelming body of research has demonstrated that students achieve greater success where teacher-librarians collaborate with classroom teachers and where teacher-librarians provide leadership in professional learning in the school, particularly through peer coaching ([Library Research Service, 2013](#)). This is exactly the kind of leadership that is needed for schools to bridge the digital literacy divide.

Digital literacy is now being understood as an essential element of overall literacy. The pressure and motivation to address the challenge is broadly-based, meaning even more pressure on educational institutions to be successful. Society is worried about digital literacy. Governments are worried about digital literacy, and school systems seem finally ready to address the problem. All of this represents an unprecedented opportunity – the perfect storm. It is time to leverage this opportunity to advance the vision of the school library learning commons, and the professional leadership of twenty-first century teacher-librarians.

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