

**Mobile(izing) Educational Research: Historical literacy, m-learning, and technopolitics**  
**Recherche en éducation mobile(isée) : littératie historique, apprentissage mobile et technopolitiques**

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Résumé de l'article

Ce projet de recherche explore les liens existant entre les littératies historiques, la littératie numérique et l'apprentissage mobile comme moyen de mobilisation technopolitique. Pour ce faire, nous avons développé une application mobile destinée aux futurs enseignants et visant à analyser l'absence, au sein des manuels d'histoire et du matériel pédagogique, du système de pensionnats amérindiens. En se basant sur les résultats de notre projet de recherche en histoire numérique subventionné par le CRSH, nous cherchions à créer une « technopolitique » comme forme de littératie critique en histoire. Par nos travaux, nous voulions comprendre de quelle manière les technologies numériques ont contribué à éveiller et mobiliser la recherche en éducation, plus particulièrement en travaillant à décoloniser les récits de l'histoire canadienne véhiculés, au-delà des modes traditionnels de transmission.

# MOBILE(IZING) EDUCATIONAL RESEARCH: HISTORICAL LITERACY, M-LEARNING, AND TECHNOPOLITICS

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**ABSTRACT.** This research project explored the nexus between historical literacies, digital literacy and m-learning as a praxis of mobilizing technopolitics. To do this, we developed a mobile application for teacher candidates to study the absence of the Indian Residential School system as a complement to history textbooks and other curricular materials. Building on the findings of our SSHRC-funded digital history research project, we sought to engender a “technopolitics” as a form of critical historical literacy. Out of this work, we sought to understand how digital technologies contributed to recent calls to mobilize educational research and more specifically, while working to decolonize existing narratives of Canadian history beyond traditional modes of dissemination.

## RECHERCHE EN ÉDUCATION MOBILE(ISÉE) : LITTÉRATIE HISTORIQUE, APPRENTISSAGE MOBILE ET TECHNOPOLITIQUES

**RÉSUMÉ.** Ce projet de recherche explore les liens existant entre les littératies historiques, la littératie numérique et l'apprentissage mobile comme moyen de mobilisation technopolitique. Pour ce faire, nous avons développé une application mobile destinée aux futurs enseignants et visant à analyser l'absence, au sein des manuels d'histoire et du matériel pédagogique, du système de pensionnats amérindiens. En se basant sur les résultats de notre projet de recherche en histoire numérique subventionné par le CRSH, nous cherchions à créer une « technopolitique » comme forme de littératie critique en histoire. Par nos travaux, nous voulions comprendre de quelle manière les technologies numériques ont contribué à éveiller et mobiliser la recherche en éducation, plus particulièrement en travaillant à décoloniser les récits de l'histoire canadienne véhiculés, au-delà des modes traditionnels de transmission.

What matters here isn't technical capital, it's social capital. These tools don't get socially interesting until they get technologically boring.

(Shirky, 2009, 1:08)

For youth in a digital era, it all converges, by and large. It is not online life and offline life – it's just life.

(Palfrey & Gasser, 2011, p. 191)

As several universities map out strategies for social innovation in their respective Vision 2020 statements to address the 21<sup>st</sup> century “competencies” necessary for the knowledge economy, many educational researchers are still trying to grasp how different digital technologies can enhance our capacity to produce and mobilize more accessible, meaningful, and useful knowledge. Opening up our research to such civic accessibility can potentially enhance what scholars like Willinsky (2009) call the *public good*. At the same time, educational researchers (including ourselves) are being encouraged by administrators and federal funding agencies to rethink how we might strategically create and mobilize knowledge beyond traditional modes of dissemination like journal articles, conference presentations, and professional development workshops (see Cooper 2013, 2014). However, as Shirky (2009) made clear, digital technologies do not necessarily become the key methodological tools of our research agendas until they start permeating our research and teaching community. We believe such permeation is here.

During his Ted Talk, *How Social Media Can Make History*, Shirky (2009) suggested that “there are only four periods in the last 500 years where media has changed enough to qualify for the label ‘revolution’” (2:05). The first was the printing press, which, as he stressed, turned Europe upside-down. The second was the telegraph and then the telephone, two forms of conversational media, which made two-way communication possible. Later, photos, recorded sounds, and movies were all encoded onto physical objects. Then the military industrial propaganda complex, and later other private and public sectors, harnessed the electromagnetic spectrum to send sound and images through the air via what is now known as radio and television media. This was, as Shirky described, the media landscape of the 20<sup>th</sup> century. However, this landscape is quite different today. If in the past, technology supported one-to-one, or one-to-many, as Shirky maintained, today the Internet provides a public space for many-to-many to communicate. However, as the editors of this special issue have outlined in their introduction, very few educational researchers in the field of Canadian curriculum studies have taken advantage of socially mediated platforms like the Internet, and / or handheld devices, to share their collaborative patterns of knowledge production and consumption with the public or each other for that matter. Admittedly, our professional organizations are just beginning to use social media like Twitter and Facebook to collaborate, connect, and share knowledge. And yet, this technology already permeates the communities in which we work. Consequently, as politically-minded scholars, we are left

asking: how might non-Indigenous and Indigenous educational researchers and educators harness such mediated technologies to mobilize knowledge that works to address different historical narratives, like the intergenerational impacts of the Indian Residential Schooling system? How might we challenge how such narratives have been excluded from the school history curriculum and in turn the Canadian public's historical consciousness as a 21<sup>st</sup> century praxis of technopolitics?

In *Globalization, Technopolitics and Revolution*, Douglas Kellner (2001) examined the complexities related to the rise of a “new economy, networked society, and cyberspace in relation to the problematic of revolution and the prospects for a radical democratic or socialist transformation of society” (p. 14). At the turn of the 21<sup>st</sup> century, he argued that the new grounds of resistance against globalization (neocolonization) were now mediated by computer and information technology – what he then called technopolitics. “Deploying computer-mediated technology for technopolitics,” he suggested, “opens new terrains of political struggle for voices and groups excluded from the mainstream media and thus increases potential for resistance and intervention by oppositional groups” (p. 15). For Kellner, this technopolitical struggle is intrinsically predicated on critical and oppositional politics, and specifically for him, one rooted in a resistance to globalization. He argues that in this increasingly global world, one in which “all political struggle is now mediated by media, computer, and information technologies” (p. 27) and one still couched within discourses and modes of production reflective of modernity, we must make use of digitally connected tools to advance a critical and oppositional politic for the purposes of securing justice for the oppressed. An important proviso for Kellner though is the necessity of a connection to real problems; a technologically mediated and resistant politics, or technopolitics, ought to address and contend “real problems and struggles, rather than self-contained reflections on the internal politics of the Internet” (p. 24). In other words, using the technology ought to broach real political and socially unjust issues, which we believe, without question, includes the tense and historically inequitable relationship between the First Peoples and the state.

A recent example of technopolitics as applied to an ongoing problem can be seen in a piece by Tupper (2014), who sought to understand how the use of social media by Aboriginal and non-Aboriginal youth can foster activism and dissent in response to our Canadian government's ongoing neocolonial policies, such as Bill C-45, and might inform different curricular and pedagogical strategies for taking up (critical) citizenship education. Four young women – Sheelah McLean, Nina Wilson, Sylvia McAdam, and Jessica Gordon – in Saskatchewan started a technopolitical movement, which became known to the Canadian public as the Idle No More Movement (see <http://www.idlenomore.ca/story>). As Tupper (2014) made clear in her study, the youth involved with this movement utilized social media to challenge their exclusion “from the mainstream

media and politics to disseminate ideas not present within the usual spectrum of political discussion and to participate in dialogue and debates usually closed off to oppositional ideas and groups” (Kellner, 1999, p. 101). In taking up this commitment as a form of technopolitics, we explored the ways in which a mobile device (electronic devices such as smartphones and tablets that replicate the functionality of computers but are portable, long lasting, and easy to use), being a rather permanent fixture of contemporary life, might help students and teachers become what Freire (2000) called “permanent re-creators” (p. 69) of both historical knowledge and one’s obligation to its lessons.

In thinking about how we might foster a technopolitics, we returned to something that was not initially designed to be expressly political. In 2013, during the annual meeting of the American Educational Research Association, Bryan Smith developed a web application for the purposes of presenting research findings from a study on history teacher candidate knowledge of residential schools and colonial history in a creative fashion. Following a rather candid conversation about the possibilities of translating the content of this presentation into a mobile application for teaching, Bryan developed it further. When we (the authors) met after the conference, we discussed how we might incorporate this application and a web-based equivalent as part of our professional development for teaching historical thinking while concurrently addressing various historical narratives that were previously missing from the curriculum. To do so, we chose to address the absent histories of IRS survivors as part of our commitment as non-Indigenous scholars and teacher educators to the educational mandates of the Truth and Reconciliation Commission (TRC). We use these applications, discussed in this paper, as our medium of choice to enact a particular decolonizing technopolitics, one which, much like Tupper’s (2014) discussion of social media, makes use of technology to raise awareness of on-going colonial history in Canada.

In this article, we outline the following three objectives. First, we draw attention to the ways in which certain historical narratives still remain largely forgotten by Canadians – namely and most prominently, the Indian Residential School (IRS) system (see Aboriginal Healing Foundation, 2012; Niezen, 2013). Second, we describe the functionality of the aforementioned customized piece of mobile software designed to teach alternative historical narratives about the formation (or settler colonization) of what we now call Canada. It is at this confluence of mobile technology and residential schooling narratives wherein we explore the possibilities of engaging technopolitics within teacher education history classrooms. To do so, we explore how the development of historical literacies and thinking can, in relation to digital technologies, encourage history educators, teacher candidates, and future students (citizens) to rethink what constitutes Canadian history. Third, we discuss “m-learning” in relation to the various implications mobile applications have in terms of power, policy, and advocating for a praxis of technopolitics in the social studies classroom.

## A PEDAGOGICAL “TIPPING POINT”

The diffusion of mobile technologies has reached a technological “tipping point” with mobile applications (Franklin, 2011), a moment in which small ideas (the development of mobile technologies) have come to spread rapidly in a fashion similar to popular fads like the Hula-hoop, Slinky, or Rubik’s cube. For Gladwell (2000), these “tipping points” have three defining characteristics that precede what he calls the “dramatic moment”: they exhibit a “contagious” behaviour, they reflect a moment in which something small precipitates big changes, and finally, they happen quickly (pp. 7-9). The proliferation of mobile devices meets, we suggest, these criteria, where it has become contagious in character (spreading quickly and, through the production of [artificial] demand in the media, has come to be “necessary”). Although such devices might seem like a small component of everyday life, they have shifted the way people exist as social and political actors. Moreover, their proliferation happened (and continues to happen) relatively quickly. In many ways, these mobile and personal communication tools effectively preoccupy our time and attention, reframing personal engagement with the world – something accomplished largely through the small glass screens of these devices. Many people in the overdeveloped (and emerging digital and knowledge economies) economies can attest to the all-consuming relations they now have with their mobile devices (Koszalka & Ntloedibe-Kuswani, 2010, p. 141). Such devices facilitate a constant flow of communication through different social networks regardless of one’s location. This new type of interdependence is shared – a cursory scan of any particular social space will make clear the overbearing presence of these devices such that they could reasonably be considered “digital appendages,” or, what Prensky (2011) called “homo sapiens digital” (p. 20).

Although these mobile technologies have been around since the late 20<sup>th</sup> century, their seemingly dominant role in the social and pedagogical fabric of Canadian life was largely catalyzed by the growth and development of both Apple’s iOS and Google’s Android platforms, both of which were released in the mid / late-2000s. The pervasiveness of mobile technology has come to structure the ways in which new pre-service teachers learn and communicate – Twitter, Facebook, SMS, blogs, and a variety of other mobile-friendly applications factor largely in their lives. With the astonishing growth rate of mobile technologies, educational researchers are struggling to keep pace. Consequently, our research for the past two years has sought to explore the potential of using mobile applications in the following ways: (1) as a pedagogical strategy to further student and teacher understandings of the socio-historical context and the literacies required to read them; and, (2) as an innovative form of media for us as scholars to mobilize knowledge about our research.

As a supplement to their coursework, we offered pre-service teachers opportunities to volunteer for the oral history component of the project. Prior to interviewing elders, pre-service teachers attended several different workshops

that examined the theoretical and methodological processes for doing oral history research as part of their future curriculum designs for teaching the Ontario social studies and history curriculum. For the final component of the SSHRC research project, eight senior history pre-service teachers conducted oral history interviews with two Kitigan Zibi Algonquin elders (Ng-A-Fook & Milne, 2014). Through this, the pre-service teachers had the chance to partake in the pedagogical processes of “rereading” and “rewriting” their existing historical narratives on the psychosocial, cultural, and material impacts of settler colonialism with First Nations elders (Den Heyer & Abbott, 2011). We sought to create an epistemological space for university educators and pre-service teachers to identify and discuss the different tensions we experience when confronted with alternative narratives that depart from the grand narratives of a Canadian settler history.

Consequently, at the end of our two-year study, we created an experimental mobile application that we utilized during our professional development workshops with pre-service teachers to further develop their historical thinking skills and digital practices while also addressing the educational mandates of the TRC. Bryan Smith had the necessary digital competencies to program (write) RNMobile (Residential Narratives Mobile) and RNWeb (see <http://bryanabsmith.com/drnp/rnmobile.html>). Our initial research with this beta mobile and web application makes clear that there is a growing need to conceptualize and innovate pedagogical digital resources for teachers to use when studying and teaching students about the different historical accounts of the intergenerational impacts of the IRS for both Aboriginal and non-Aboriginal Canadians (Aboriginal Healing Foundation, 2012). As our Insight development research drew to an end, we sought to understand how our beta version of RNMobile / RNWeb could address the present absence of certain histories in the Ontario social studies curriculum while also creating a site for teachers and students to refine their historical thinking skills and digital practices for learning history within 21<sup>st</sup> century classrooms and the complexities of its emergent digital environment (see Battiste, 2013; Mishra Tarc, 2011; Weenie, 2008). While working with teacher candidates during this final phase of our study, we realized the important social contribution of making certain historical knowledges, like the IRS and the traumatic historical narratives of both its victims and survivors, more readily accessible for both Indigenous and non-Indigenous teacher candidates to take up in relation to the development of their historical thinking competencies as a praxis of technopolitics.

By itself, the employment of technology to contest patterns of dominance is not new (Kellner, 1999; Rolón-Dow, 2011), nor can it, like the broader discipline of social studies make any guarantees (Smith, 2014). However, mobile technologies thus far have prompted us to consider their potential benefits within the contexts of 21<sup>st</sup> century classrooms. Specifically, work has already been done in the digital space to address the needs of decolonizing interventions. As noted

earlier, Tupper (2014) argued that the Idle No More movement was able to marshal social media for the purposes of drawing attention to government legislative actions that threatened an already precarious and tense historical relationship between the state and First Nation, Métis, Inuit, and non-status communities here in Canada or what others call Turtle Island. As Tupper concluded, the movement “could not have had the immediate and pervasive impact it has without social media” (p. 92). The successful implementation of digital social justice projects such as Tupper’s points to the ways in which the tools that contribute to what Weaver (2010) called a posthuman social context can be used to confront systemic historical and contemporary forms of institutional oppressions.

### LEVERAGING MOBILE APPLICATIONS AS A PRAXIS OF TECHNOPOLITICS

The mobile application was designed as part of the [Digital Residential Narratives Project](#), a scholarly undertaking created with the aim of leveraging mobile technologies to mobilize different excluded knowledges of Canada’s ongoing colonial history. Specifically, the project gave rise to a mobile application along with a web-based complement to showcase the history of the residential school program. This app was used in various workshops led by the authors in a collection of social studies methods classes (with a particular focus on primary / junior social studies methods classes). The workshops involved the use of two different but functionally equivalent applications.

[RNMobile](#) is designed to work with Android (various Smartphones by Samsung, LG, Sony and HTC to name a few) and iOS (iPhone, iPad and iPod Touch) devices. It offers a variety of avenues where users can engage different sources to learn more about the IRS system. As of this publication, the application offers several different features. First, the application has a map detailing the location of each Canadian residential school (signified by purple markers), the dates of operation, and the distance from the user’s current location, signified by a black marker (see Figure 1). This is approximate since the markers for the schools are located in a random location in the towns (precise data was unavailable). This feature is also only available if GPS functionality is present and enabled. Moreover, our prior research suggested that pre-service teachers are quick to displace the location of these schools both temporally (“it happened a really long time ago”) and spatially (“the schools existed really far away”) (Ng-A-Fook & Smith, 2015). Therefore, the map was designed with this in mind as a technique through which to foster awareness that these schools were considerably more proximal, both chronologically and physically.

Second, the application includes a list of resources (see Figure 2), continually updated, to provide information and content for pre-service teachers interested in exploring this topic themselves or with their students. Third, the application provides video interviews from school survivors that students can watch to give



them a more nuanced insight into the conditions that characterized life in the schools. Fourth, the application includes a lesson that makes use of some portions of the app. Here (lesson subject to change), the app invites students to research the geographic violence (the use of spatial arrangements and distance to enact a form of violence through separation) that was imposed upon students as they were separated from their families and moved vast distances to attend school. In comparing this experience with their own, students can make use of some elements of the historical thinking benchmarks as a modest attempt to understand the violence enacted upon Indigenous children as the students refine their capacities to perform the different disciplinary competencies that now constitute historical literacy. Finally, the application acts as a digital archive in providing a collection of pictures that students and teachers can analyze as primary sources to construct their interpretations of different historical narratives that are often included from existing history textbooks and the public school curriculum.

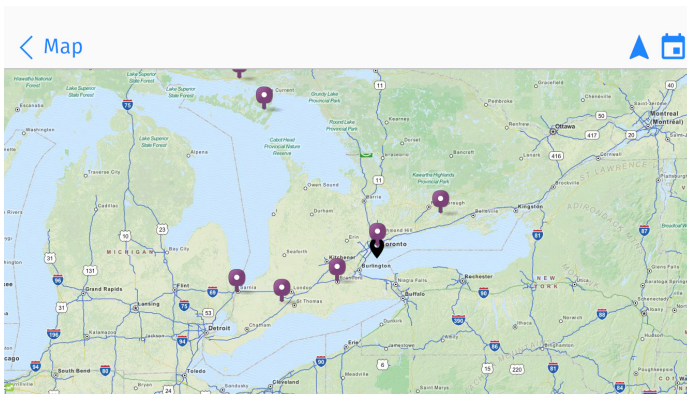


FIGURE 1. *Map of the residential schools*

RNMobile was designed to accomplish three interrelated goals. First, the application was designed to let users encounter the difficult knowledge (Britzman, 1998) put forth in the narratives of IRS system survivors. As Mishra Tarc (2011) suggested, “sustained symbolic engagement with the other’s textual artifact of unthinkable experience can leave the learner altered and with a lasting impression” (p. 356), an impression that, here, is digitally mediated and sustained through the persistence of technology in (potentially) occupying our time (see Grant (2014) for a theorization of using applications as a means of making possible antiracist work). The textual artifacts, here digitized, are encased within the confines of ones and zeroes while remaining, at heart, textual representations of violence, colonial dominance and subversive cultural practices. Continually updated, the digital space intrinsic to both the mobile and web application can respond to the historical investigations and epistemological ignorance of both teachers and students (Malewski & Jaramillo, 2011).

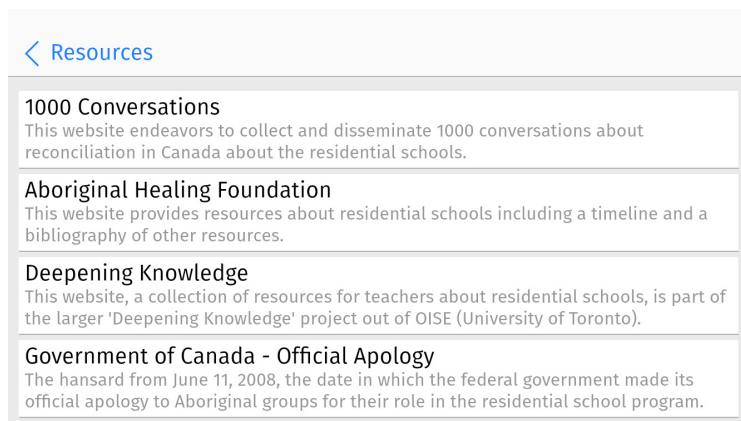


FIGURE 2. *Collection of resources*

Second, the presentation of these artifacts inherits from the medium the potential richness of digital content delivery – audio and video can be streamed, pictures can be scaled and panned, and students can work digitally with the content in a fashion that is often limited by the confines of a page in a text(book). In this way, the user’s engagement is open to direct encounters, letting students zoom in (in some respects, quite literally) on the knowledges that structure representations of the IRS system that in turn hide its narratives from our epistemological and historical fields of view. Thinking about historical literacies, this method of encountering knowledge that would otherwise be excluded as a form of null curriculum from social studies classrooms lets students work with primary sources, compare ideas and contest what constitutes the “historically significant” stories (or mythologies) we tell (or don’t) each other about Canadian history. As such, the students have an opportunity to reread history as a living document and as a text that requires multiple nuanced literacy skills. In so doing, students can begin to think technopolitically.

Third, the application makes possible the mobilization of First Nation, Métis, and Inuit historical narratives through a format convenient and knowable to many students and teachers either here in Canada or abroad. To ensure proliferation of these stories and, consequently, to ensure that the means of engendering a technopolitical disposition is itself not exclusive of those who own mobile technologies, we created a complementary web application called [RNWeb](#) (see Figure 3). This application is functionally equivalent to RNMobile, designed to provide a similar experience for those who do not have a (compatible) mobile device. Here, students can work with the same content but do so on the larger screen that they have for their notebooks and desktops. While some functionality is lost (pinch to zoom for instance), students can still use the web version to access the same material.

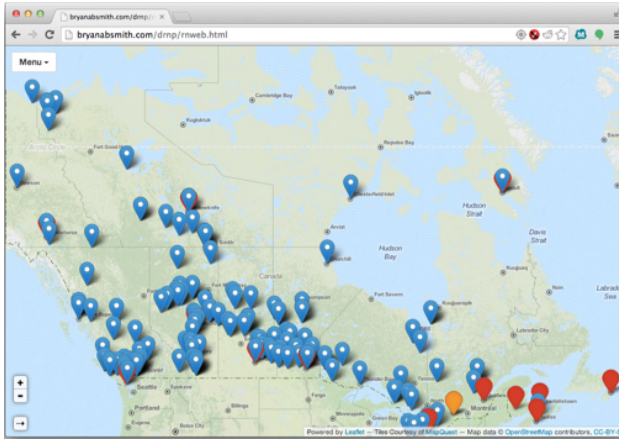


FIGURE 3. Screenshot of RNWeb

To facilitate both the mobilization and exchange of knowledge, both the web based and mobile version of the project were developed to ensure that individuals could access the content from any Internet-connected device. Web based applications, while available anywhere, might not be optimized for the smaller screen space, nor might they be able to make use of the additional functionality available to mobile applications. Mobile applications, on the other hand, require that one have access to a handheld device and while, as noted earlier, many people own such a product, the possibility that one does not should not preclude them from benefiting from the knowledge mobilization efforts.

By provoking different responses to the historical relationships between Aboriginal and non-Aboriginal Canadians, the application invites students to read the medium and history as something that requires tech-savvy, socio-historical critical interpretations. Instead of simply being told what happens, students have to interpret, analyze, and employ their digital literacy competencies to make sense of the knowledges being made available (Erstad, 2011). They do so in a context in which mobile learning, or “m-learning,” is becoming increasingly central to the ways in which people undertake learning.

### RNMOBILE AS M-LEARNING

In a world where media is global, social, ubiquitous, and cheap, in a world of media where the former audience are now increasingly full participants, in that world, media is less and less often about crafting a single message to be consumed by individuals. It is more and more often a way of creating an environment for convening and supporting groups. (Shirky, 2009, 14:44)

Although no longer a nascent technology, many educators and students are still grappling with the tools and pedagogical heuristics of mobile learning or “m-learning.” Ally (2009) argues that the first book on mobile technology in

education was only published in 2005 (p. 2), itself serving as a stark reminder that the diffusion of mobile technology through discourses of education and curriculum are still very much in development. In part, this is exacerbated by a conceptual ambiguity around the term “mobile learning” with some suggesting that its definition and in turn meaning is “still emerging and still unclear” (Traxler, 2009, p. 13). Moreover, definitions of m-learning vary greatly, with emphases ranging from the technological to the pedagogical. Like others in the field (e.g., Terras & Ramsay, 2012), we seek to avoid technocentric definitions as they are constrained by the latest technological instantiations. Rather, we prefer to conceptualize m-learning using a socio-cultural approach that emphasizes the role of the learner to the technology as central, not peripheral. This approach is articulated by Sharples, Taylor and Vavoula (2007), who defined m-learning as “the processes of coming to know through conversations across multiple contexts amongst people and personal interactive technologies” (p. 225). The way m-learning is defined is reflected in the way it is purposed.

Traxler’s (2007) categorization of m-learning demonstrated the multifaceted ways in which mobile technologies are being deployed in learning environments, both formal and informal. According to Traxler (2007), m-learning can be categorized as portable e-learning (to support e-learning anywhere, anytime), connected classroom learning (to support collaboration and augment other technologies such as SmartBoards), informal learning (to offer personal and situated learning), mobile training (to give knowledge workers just-in-time support and information), as well as remote / rural learning (to deliver education where conventional e-learning technologies would fail). We add to Traxler’s (2007) list the category of knowledge mobilization, and posit that m-learning represents a process in which the platform serves as a vehicle through which research is mobilized, represented, and subsequently transformed in the learning process. In this way, m-learning moves us beyond the bounds of the single user to encompass both the learner and the researcher, both of whom are constructing new understandings of what it means to produce and consume knowledge. In other words, learning happens not when we consume information, but when we collaborate, research, and publish on-the-go (Stead, 2006). This stance is reflective of the Internet’s evolution away from the retronym Web 1.0 (the read-only web) and towards Web 2.0 (the read-write web). While the current iteration of RNMobile does not have Web 2.0 features embedded in it per se, it is our hope that people will use this app alongside other apps that facilitate collaboration and two-way communication in order to confront and contest the knowledges presented therein.

#### **RNMOBILE: PERSONALIZED, SITUATED, AND AUTHENTIC**

It would be troublesome to assume that using technology for technology’s sake is automatically beneficial to learning. What, then, is it about m-learning that provides unique learning opportunities apart from conventional learning, or

even e-learning, for that matter? To make a case for the unique affordances of RNMobile, we will draw upon Traxler (2007) who argued that m-learning is “uniquely placed to support learning that is personalised, authentic, and situated” (p. 7), a combination of qualities necessary for technopolitical encounters. Given that technopolitics are rooted in the use of technology to resist normative patterns of discursive dominance, creating personalized, authentic and, perhaps most importantly, situated learning heuristics is key. On top of this, old modes of learning have thus far insufficiently decolonized the pedagogical space. In other words, the old tools have protected the discursive regime of settler colonial history in Canada, suggesting possibilities and the need for new tools.

Moreover, according to Traxler (2007), m-learning is personalized as it “recognises diversity, difference, and individuality in the ways that learning is developed, delivered, and supported” (p. 7). One of the strengths of RNMobile, and other mobile apps for that matter, is that it offers learning that is “just-in-time,” “just enough,” and “just-for-me” (Traxler, 2007). Learners choose when and how they use RNMobile, and they direct their learning according to their personal preferences. They chart their own epistemic journeys, creating knowledge from “bite-sized” pieces of learning content, which is a strict departure from traditional face-to-face learning, where all learners receive the same information, at the same time, and in the same order. What m-learning lacks in standardization, it makes up for in personalization. Given the nonlinear nature of m-learning, learning objects (loosely defined) in RNMobile have been designed to be interrelated and navigable from a multitude of entry points. One learner might use the app as a medium to witness video testimonials from survivors of residential schooling. Another might visit the app in order to find resources pertinent to teaching aboriginal history and, from there, decide to use the app’s map feature in the classroom to give students an idea about the temporal and spatial proximity of this historical event. Yet another might use the app to research residential schooling for a school project or for personal interest. Regardless of their entry point, learners are able to use this asynchronous form of media to personalize and construct knowledge according to their interests, motivations, learning styles, and time demands.

Additionally, RNMobile provides learning that is authentic, meaning “learning that involves real-world problems and projects that are relevant and interesting to the learner” (Traxler, 2007, p. 7). Further, authentic learning refers to learning based on authentic tasks, or what is commonly known as an inquiry-based approach to learning. In an inquiry-based model,

students find and use a variety of sources of information and ideas to increase their understanding of a problem, topic or issue of importance. It requires more than simply answering questions or getting a right answer. It espouses investigation, exploration, search, quest, research, pursuit and study. It is enhanced by involvement with a community of learners, each learning from the other in social interaction. (Kuklthau, Maniotes, & Caspari, 2007, p. 2)

RNMobile is well positioned to provide content for an inquiry-based learning project with primary-source evidence such as video testimonials from residential schooling survivors, a photographic archive, as well as an interactive map. A growing body of evidence suggests that learners in an inquiry-based classroom are more engaged and self-directed, both of which are correlated to greater student achievement as well as enhancing their capacities, as we suggest, to develop historical empathy (North Central Regional Educational Laboratory, n.d.; Ontario Ministry of Education, 2011).

Lastly, RNMobile provides opportunities for situated learning. M-learning, often synonymous with u-learning (short for ubiquitous learning), speaks to the untethered technical affordance of mobile devices. In other words, the portability of mobile devices opens the possibility of learning anytime and anywhere. These learners, unconstrained by time and space — as well as other typical institutional boundaries — are what Alexander (2004) called learner nomads. Learner nomads may use their mobile devices to counter the typical parasocial interaction encountered in traditional schooling, especially large lecture settings where they might, for example, use mobile apps such as Twitter to engage in interactive conversations parallel to the lecture (Reinhardt, Martin, Beham, & Costa, 2009). We call this nomadic in the sense that, while they are physically present in the classroom, they are simultaneously virtually present beyond it. Beyond the classroom physically, learner nomads might use mobile devices on-the-go to engage in e-learning (or electronically-supported learning), hybrid learning (a combination of face-to-face and e-learning), informal learning, or training for the knowledge economy. Instead of people going to the learning, the learning comes to them. A mobile app such as RNMobile is doubly advantageous in that it has the potential to bring community knowledge into the classroom, and brings classroom learning and activities into the community (Koszalka & Ntloedibe-Kuswani, 2010). With either RNMobile or RNWeb, students can experience in their classrooms first-hand accounts of survivors from their communities, content not commonly found in government-approved textbooks. Then, while in the community, learners can access real-time learning personalized to their location. For example, students might discover that they are only 10 km from a former residential school by using the interactive map, and then discover that this school was only closed just over a decade ago. From there, they might next use the app to look at photographs and other historical documents from the school itself.

As a tool through which personal, authentic and situated learning can occur, mobile technologies offer themselves as an effective platform through which to address the similarly personal and situated dynamics of history (education). Indeed, the development of historical literacies itself requires personalized and authentic engagement that is situated in relation to the historic, cultural and political context of the student. For these reasons, RNMobile can strengthen a student's historical literacy skills and open them up to historical literacies for decolonizing our conceptions of Canadian history while further developing their mobile learning skills.

## PROVOKING M-LEARNING AS TECHNOPOLITICS

As the third millennium unfolds, one of the most dramatic technological and economic revolutions in history is advancing a set of processes that are changing everything from the ways in which people work to the ways that they communicate with each other and spend their leisure time. (Kellner, 2001, p. 14)

What we are calling for today is not for us to use RNMobile, historical thinking, or m-learning as another teacher-proof technology or pedagogical strategy that will save our children from the current educational system and its null history curriculum. Nor are we suggesting that any of these will enlighten us from our ongoing epistemological, ontological, and discursive narrative reproductions of ignorance. Rather, as public intellectuals, educational researchers, and teachers, we are committed (perhaps more than ever) to developing, mobilizing, and acquiring, “new forms of technological literacy to intervene in the new public spheres of the media and information society” (Kellner, 1999, p. 110). And yet, “in addition to traditional literacy skills centred upon reading, writing, and speaking,” and as activist intellectuals, we need to learn to use such new technologies to engage the public with our research findings (p. 110). However, as Kellner stressed, such historically informed praxis of technopolitics is only one arm of our struggle to inform the public about certain issues, like the historical policies of colonization. Therefore the app is only one part of the larger critical pedagogical framework necessary to “promote awareness and public education of Canadians about the IRS system and its impacts” (Truth and Reconciliation Commission, 2013). University educators, researchers, teachers, and organizations like the *Legacy of Hope Foundation*, *Project of the Heart*, the *First Nations Child and Family Caring Society of Canada*, and so on, must work collaboratively in schools and in cyberspace to literally stand on the steps of Parliament Hill advocating for all of us to remember the lost generation of residential school survivors and the lived experiences put forth in their respective historical narratives.

Students are coming to our classrooms entrenched in a world in which digital technologies are central to the ways in which they interface socially, politically, and pedagogically with each other. The advent of these technologies makes possible a more openly accessible and historically rich education for our students, a possibility that opens up a space for unraveling the hidden narratives that serve as pillars in what constitutes our shared history. With the proliferation of mobile devices and the increasing emphasis on historical literacy development, there is a growing need to harness the ways in which we develop these multiple literacies with our students. By taking advantage of these mobile technologies to deconstruct the mythologies we tell ourselves (or not) about Canadian history, we are employing the most pervasively available digital medium, one that is always on, always with us, and always accessible. In developing a mobile application to teach the often publically forgotten



or unknown narratives of residential schooling (Mishra Tarc, 2011; Smith, Ng-A-Fook, Berry, & Spence, 2011), we seek to address and make use of the near omnipresence that mobile devices now enjoy in our lives. And while we do not want to suggest that RNMobile is a mobile panacea, it does endeavour to bridge the gap between the emergence of digital technologies as central to our lives and the need to foster historical literacies in relation to the often forgotten traumas of our collective past.

## INITIAL FINDINGS

While the development of the app and our respective pedagogies that incorporate it are still in their infancy, preliminary findings point to some positive benefits from using the app as a technopolitical tool of decolonization. Students like the visual representation of the app, with one student saying that they “enjoyed the visual components, being able to visually see the geographical aspect of these residential schools. Being able to know where you are currently in comparison to where other residential schools have been.” Others noted something similar, with one saying, “[I] really liked how my location can be shown in relation to residential schools in Canada,” with another remarking, “[I] like how they are all mapped out to see — allows for a visual understanding of the topic.” According to another participant, the app had pedagogical utility:

The app is very user friendly, even for those of us who are not tech-savvy. I really appreciate the lesson plans. They are well planned and written and I intend to use them to teach social studies in the future for sure. This is a fantastic tool for beginning teachers who have concerns about teaching hot topics in social studies.

Another participant echoed this sentiment, noting that “there is great potential for this in the learning environment. I would definitely use this tool going forward!” Not all commentary was positive but many of the critiques pointed more to the functionality (or lack thereof) rather than the pedagogical issues taken up within the app itself. One participant noted that “the map and survey were difficult,” while another critiqued the functionality: “it’s cool. Kind of slow. Could always be more aesthetically pleasing.”

One respondent in particular did touch on an important pedagogical issue. While the app may be useful, one participant felt that they lacked information on how to use this in the classroom. As they stated, “I’d also like a ‘how to introduce the concept of residential schools to elementary schools’ guide.” This comment, we suggest, points to a gap in social awareness of the narrative of residential schools. Being largely absent from their understandings, teacher candidates might have a more difficult time connecting the technological heuristic with a conceptualization of the pedagogy to teach the content. In other words, there may very well be a disjuncture between the use of the app and the pedagogical understandings required to construct knowledge around something such as the history of the Indian Residential Schooling system.



## CONCLUSION

We argue that these technologies, although certainly not a decolonizing panacea, do offer new means of fostering awareness regarding a technopolitics of decolonization, specifically as it pertains to the history of residential schools. Apps such as these can be springboards for more complicated conversations around Indigenous issues in Canada today, ones that can act to highlight how, in some respects, some things haven't changed. As Blackstock (2009) noted, "there are more First Nations children in child welfare care now than at the height of residential school operations" (p. 89), a haunting reality that points to the ways in which the historical legacy of colonialism is hardly limited to the residential school program. In this way, we see the app as a means of fostering not only a historically focused technopolitics but more generally, a technopolitics that resists normative notions about the "anthropological realm" that constitutes perceptions of Aboriginal peoples here in Canada (Donald, 2009). We also see the applications as a means of fostering a critically informed and engaged ethical citizenship, one in which we as peoples of Canada foster ethical relationships with each other and our historical obligations (Tupper, 2012, 2014). Although the applications do not in and of themselves make ethical relationships possible, they do help engender a technopolitics, which itself can encourage political and critical questioning of why such ethical relationships are often made difficult in a colonial context. While the teaching of content and the nascent excitement on the part of the users doesn't necessarily engender this type of action, it might prompt students to use technology as a means of questioning what is often excluded from conversations of history.

As Kellner reminds us, "many activist groups are coming to see that media politics is a key element of political organization and struggle and are developing forms of technopolitics in which they use the Internet and new technologies as arms of political struggle" (n.d., p. 7). In mobilizing their historical and contemporary stories of injustice, the applications become spaces and tools of political resistance, a praxis of technopolitics, encouraging individuals to rethink the device in their pocket as more than a means of socializing with their peers. However, doing so requires a basis in reconceptualized notions of what constitutes history, how we understand / produce it, and how this then becomes a means for reconsidering what it means to live in the present. We argue that digital mobile tools, as personalized, situated, and authentic ways of learning, may very well be a way of re-imagining how we read history. As educators, "struggling for democratisation and social justice," we heed Kellner's (2001) suggestion that we "must devise ways to use new technologies to advance a radical democratic and ecological agenda and the interests of the oppressed" (p. 18). While digital history is by no means a new phenomenon, mobile application use as a digital praxis of technopolitics is still a nascent effort, one which we suggest holds promise as a means of encouraging ethically grounded pedagogies of citizenship and history.

At the beginning of this article, we asked how a custom mobile application might foster new ways of thinking about m-learning as a technopolitical act. The answer to this question is largely dependent on how each user integrates the mobile app in their classroom space. While we believe we had some success in conveying to teacher candidates the technopolitical value of mobile apps to teach histories of colonial violence, success in different contexts will depend on the teacher, student, and support of the administration and community. That said, we believe that the creative use of these devices in our classroom spaces has the rich possibility for facilitating complicated, personalized and situated conversations. In so doing, students may broaden their understanding of the settler colonial context and participate in a technopolitics of their own.

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