

Video Making, Production Pedagogies, and Educational Policy

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Abstract

The promise of “21st century learning” is that digital technologies will transform traditional learning and mobilize skills deemed necessary in an emerging digital culture. In two case studies of video making, one in a Grade 4 classroom, and one in an adult literacy setting, the authors develop the concept of “production pedagogies” as complex multiliteracies embedded in video production oriented to meaningful social ends. Drawing upon concepts of translation in Actor Network Theory (ANT) and the “workaround,” the authors trace how in spite of the imaginaries of “21st Century Literacy,” policy regimes privileged networks oriented to “minimal proficiency” print literacy. They theorize that the workarounds in which practitioners engaged illuminate three nodes or sites of action to strengthen production pedagogy networks: how learners are defined or problematized in literacy projects, how people get access to powerful digital literacy tools for learning, and how time-space regimes of traditional schooling are reconfigured.

Keywords

educational policy, public education, literacy, technology, educational reform

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Institutions may hope to follow the advice of the prince in Lampedusa's *The Leopard*, who counsels his peers, "Change everything just a little so as to keep everything exactly the same."

Bloom (1994, p. 16)

Digital environments provide new opportunities to enable [learners] to create, access, and share multimedia resources and engage in collaborative and "distribute" learning (Davies & Merchant, 2009; Lankshear & Knobel, 2011). Many have considered how learners might use new media to take increasing control of their lives and engage critically with the world around them (Bigum, 2002; Jenkins, 2006). Such opportunities, however, can present challenges to practitioners as they may not sit easily alongside other priorities and practices. In many countries—including England where this article originates—such developments occur against a background of literacy policies and practices that focus primarily on paper-based alphabetic literacy

Burnett, (2014b, p. 2).

Video making, multimodal expression, and media education of many kinds have long traditions in human culture and education contexts. However, the availability of digital technologies allows users much more control of "image manipulation and editing . . . than was available with old technology" (Buckingham, 1998, p. 42). Increasingly, literacy theorists and researchers recommend that educational institutions use digital means with students to promote both print-based and multimodal literacies (Carrington & Robinson, 2009; Gee, 2013; Lotherington & Jenson, 2011). Many have observed that literate practices in the 21st century require that educated citizens are able to consume, produce and critique a range of multimodal media (Jenson, Taylor, & Fisher, 2011; Kress, 2003; Lankshear & Knobel, 2011; Rogers, Winters, LaMonde, & Perry, 2010; Sheridan & Rowsell, 2010). Federal and provincial education policy in Canada calls for the deepening of digital and critical problem-solving skills for adults and children. For example, the British Columbia Ministry of Education vision for learning in the K-12 system is aligned to "21st century learning" wherein "students use educational technologies to apply knowledge to new situations, analyze information, collaborate, solve problems, and make decisions. Utilizing emerging technologies to provide expanded learning opportunities is critical to the success of future generations" (Government of British Columbia, 2013b, para. 1). Similarly, Canadian federal adult literacy policy emphasizes adult inclusion in the "digital economy": "For Canada to become a leader in the digital economy, digital skills development must be fostered in all Canadians" (Government of Canada, 2011, para. 7).

In spite of this enthusiasm, researchers are reporting that the take-up of digital means in educational institutions is not without problems, one of which Burnett alludes to above: policies and practices that see *real literacy* as print- and paper-based alphabetic literacy practiced by individual actors (Hamilton & Hillier, 2007; Kendrick & McKay, 2004; Tan & Guo, 2009). We have been engaging in projects over the last few years with Canadian second language child learners of English and French, and adult learners in community literacy programs, exploring how language and literacy learning is enhanced and/or constrained as students participate collaboratively in various digital and multimodal activities. We describe in this article two case studies, one in an urban Grade 4 classroom, the other in a semirural adult learning center, in which digital and multimodal activities with learners have been designed to accomplish what deCastell and Jenson (2006) called “production pedagogies”: the orientation of teaching and learning activities to the production of socially valued “things” (in our case, videos) to be shared with known and unknown audiences. Like Dyson (2003), we believe that learners come to understand written language (and perhaps multimodal literacies of image, sound, gesture, movement) when they have “some sense of the functional work—the social ends” (p. 50) of literacy.

We begin by describing our understandings of theoretical perspectives that have been helpful in examining the video making projects: the New Literacy Studies (NLS), production pedagogies, and Actor Network Theory (ANT). We then describe our ethnographic case study methods and the analytic lenses linked to ANT and the concept of the “workaround” (Campbell, 2011) that we have used to understand and illuminate just why it is hard to incorporate digital technologies for meaningful social ends in educational settings and how people work around these difficulties.

In the case studies we describe, learners collaboratively created digital products that arguably permitted them to, as Burnett (2014b) puts it, “take increasing control of their lives and engage critically with the world around them” (p. 2). While the contexts and goals for K-12 and adult learning settings are quite different, and the sites are located on opposite sides of the country, both experienced similar constraints traced to networks that privilege the individual consumption and measurement of print-based, alphabetic literacy (the “old” literacy; Kalantzis & Cope, 2013, pp. 4-5). We illustrate how educators who want to incorporate new technologies to support production pedagogies must engage in complex workarounds that highlight inherent tensions between the old literacy and new literacies, and also how these workarounds may signal the need for policy change and possible forms that such change may take in the support of new literacies in formal education settings. We conclude by exploring what these “workaround stories” may tell

us about where the biggest difficulties with production pedagogies lie, and, we hope, how to design policies and practices toward more powerful social and educational ends.

Theoretical Framework

NLS

Tracing who or what has the power to “name and define” what counts as literacy (Street, 2011, p. 580) is central to understanding how some literacies are privileged within an emerging digital culture. Street (1984) differentiated two models of (or ways of defining) literacy: an “autonomous” view that treats literacy as a set of invariant skills carried around in the brains of individuals, and an ideological view in which literacy is seen as embedded in local contexts of practice, including circulations of power and discourses that privilege some literacy practices and marginalize others. From the autonomous perspective, literacy is an individually held accomplishment that can be assessed regardless of context. Such a model permeates national and international views of literacy. However, in about the last 40 years, fine-grained, ethnographic studies of literacy practices have made visible the diverse ways in which literacies are used, valued, and privileged by people within and across settings. For some readers and writers, for example, in some contexts, reading and writing are collaborative exercises in which individuals must share expertise to get meaning from printed text, or to create text. In Street’s view, such investigations have led to an ideological model of literacy, a model used by NLS scholars. For them, literacy is not an invariant skill or a set of skills acquired by individuals and thereafter universally applicable, but rather is a configuration of practices (ways of using texts) that are situated within specific historical, cultural, and social-spatial contexts (Barton & Hamilton, 1998; Prinsloo & Rowsell, 2012). An emerging focus of NLS research explores how literacies themselves are implicated in the relations of ruling (Smith, 2005), as certain literacy practices are selected and privileged (Hamilton, 2001) in local and global governance systems.

Emerging from NLS research is the recognition and valuing of many forms of representation beyond print. As Kalantzis and Cope (2013) observed, “Meanings are made in ways that are increasingly multimodal, in which written-linguistic modes of meaning making interface with oral, visual, audio, gestural, tactile and spatial patterns of meaning” (p. 2). Digital technologies, and video making in particular, are contexts for the cultivation and valuing of multimodal literacies and new forms of meaning making and expression so important in peoples’ everyday lives.

ANT

Researchers who draw upon ANT are interested in how policies and practices travel and are materialized in local settings to produce things ‘as they are’. ANT is distinguished in its *principle of symmetry* (Law & Hassard, 1999) between nonhuman actants, such as objects/artifacts and discourses, and human actants. Of interest is how these actants become linked in and across particular networks of activity (such as formal schooling), how they “enroll” other actants (human and nonhuman) and how they resist challenges to the networks they form. As Brandt and Clinton (2002) argued, objects sponsored by human meaning making “take a life of their own”:

Objects are animated with human histories, vision, ingenuity, and will, yet they also have durable status and are resilient to our will. Our objects are we but more than us, bigger than we are; as they accumulate human investments in them over time, they can and do push back at us as “social facts” independent and to be reckoned with. (p. 345)

A guiding concept in ANT-informed analyses is that of *translation* (Callon, 1986). Hamilton (2012) noted that understanding ANT as a “sociology of translations” is central to understanding its analytic power and potential. Translation refers to how “equivalencies are created between unlike things” (Hamilton, 2012, p. 14) through discursive strategies that “smooth differences,” impose order and create manageable sites of investigation (Hamilton, 2012, p. 14). This ordering involves four moments or processes that Callon (1986) has identified as *problematization*, naming and defining who or what is a problem and why; *interessement*, the categorization of actants (human and nonhuman) that arise from how they have been named and defined, often in policy texts; and then *enrolled* to participate in the network as legitimated actants in relation to others. When actants are thus categorized and enrolled, they can be set in motion or *mobilized* within the network to participate in the production of a particular social order. The success of translation relies upon practices of “purification” so that dissent, hanging threads, things that don’t “fit” in the network are deleted (Clarke, 2002; Edwards, Ivanič, & Mannion, 2009) and other meanings and resources are naturalized.

Hamilton (2009, 2011) drew upon the concepts of deletion and naturalization to show that a particular document developed centrally for assessing students in British adult education initiatives, resulted in the naturalization of a reductive view of literacy in local discourse and even local pedagogical relationships. Commenting upon the effects of this translation project she noted, “As they become naturalized in everyday practice, the processes, techniques and decisions through which [categories and classifications] were

constructed become hidden from view or “black boxed” (Hamilton, 2012, p. 14). This had the effect not only to privilege certain forms of literacy (as in alphabetic print literacy) but also an autonomous view (described above) wherein individuals were made responsible for and assessed on their capacity to carry decontextualized print literacy skills across different life settings and domains. There is particular resonance with ANT for projects such as ours that explore digital technologies in education settings, because technologies, discourses, and objects are interpreted not as neutral tools that humans use to particular ends, but rather as actants that shape and produce network effects.

Production Pedagogy

Orienting teaching and learning activities to the production of socially valued “things” (in our case, digital texts) to be shared with known and unknown audiences is not a new idea in educational theory. Ideas about learning through doing and making have been discussed widely and current discussions often respond to the influential educational theories of Lev S. Vygotsky, John Dewey, Seymour Papert, and many others, although there were much earlier exponents of activity in learning.¹ The phrase often associated with Dewey, “learning by doing” refers to his ideas about how schools should engage children in experiencing the solving of problems, and to his idea that Polito (2005) glossed as, “for thought to develop, the problems need to suggest to the children something to do” (p. 482). In *How We Think*, Dewey (1910) argued that literacy, for example, arose in human societies as large groups of people solving problems required ways to record their experience and thinking. In his view, schools should provide children occupations and the tools (the most important of which is language²) with which to deal with problems and thus build both socially and individually, knowledge structures. More recently, deCastell and Jenson (2006) described a project which sought to “identify the conditions and assess the needs of street-involved “queer” and questioning youth” (p. 227) in Vancouver, British Columbia. Current and former street-involved youth, university researchers, and university students worked collaboratively to produce a variety of media to inform the study contractors about needs for housing and other services for lesbian, gay, bisexual, and transgender (LGBT) youth. deCastell & Jenson argued that our ideas about “progressive pedagogy” and “critical thinking” might need reconceptualization, as they saw in their project, “critical capabilities located within, and subordinated to, functional social action, particularly in concrete activities of production” (2006, p. 243). For these researchers, “production [is] foundational to educational activity and critical thinking [is] built into it” (p. 240). We are interested in how education can result in functional social

action, and have been investigating this in our examination of the production processes in our various projects.

Like other researchers in the vein of New Literacy Studies, we are interested in the social and material practices provided for (or initiated by) learners in their diverse environments and in the qualities of the material, social, and symbolic tools that such environments make available. These may be influenced by how learners themselves have been problematized, enrolled, and mobilized as people with particular kinds of learning needs, deserving of or requiring particular kinds of resources. For, as deCastell and Jenson (2006) pointed out,

When youth are engaged as knowledgeable, thoughtful, and above all, legitimate social actors with a contribution to make to their own and their peers' well-being . . . creativity, resourcefulness and similar indications of considerable intelligence, ability, and understanding come into view. (p. 238-239)

Of course, digital products are only one example of what might result from production pedagogy. Arts education (art-making, play-making, etc.) has long provided examples of production-oriented learning (Gallagher, 2007; Mitchell, 2006). We believe that the creation of artifacts, in this case, new media artifacts, has the capacity to engage learners not only in developing literacies that will be important in their social futures but also in developing habits of critique and commitment to agency that, as "powerful literacies" (Tett, Hamilton, & Crowther, 2013), will have relevance to their lives.

Method

Research Purpose

Our intention in this study was to consider the question of why it was so difficult to incorporate digitally mediated production pedagogies in the educational settings we studied, in spite of policy regimes governing each case setting that extol the virtues and necessity of digitally mediated "21st century Learning" described in the introduction to this article.

Case Studies

We use ethnographic approaches of participant observation, interviews, and document analysis to create detailed descriptions of the local doings of production pedagogies, one of video production in a Grade 4 classroom, the other of video production in an adult learning center. Each case is followed

by a description of the policy context in which these production pedagogies emerged (or struggled to emerge) in which we illustrate our analytic tools of the “workaround” and ANT concepts of translation to follow the dissenting practices of “those being mobilized at the margins” (Clarke, 2002, p. 119) of hegemonic autonomous alphabetic print-based literacy.

Case 1 documents the video production work of a classroom of 9-year-old children in a public school located in an urban area of mostly high-rise apartment buildings near a large regional park. The school catchment area includes children whose families rent small apartments, and whose financial resources are limited. Like many children in such circumstances, on provincial tests of reading, writing and mathematics in Grades 4 and 7, the children in this school regularly score “below expectations.” Children in the class came from 15 different language backgrounds other than English and most were designated English language learners at some point in their elementary school years.

Study participants included the second and third authors, several graduate research assistants, a videographer employed by the university who has a great deal of experience videotaping in classrooms, a videomaker who leads the education arm of a local nonprofit film society, a classroom teacher and the “technology-support teacher” who worked with her, and 26 Grade 4 children. These actors were enrolled to participate in different ways: to instruct and aid the 26 Grade 4 (mostly English language learning) students in a classroom in video making (the teachers and the instructor from the video making agency), to video-document the students’ video making (the Research Assistants and the videographer), to record participant observations to supplement the video documentation, and to formally and informally interview participants (Researchers 2 and 3). As it happened, however, all the university-affiliated researchers also instructed the children in their video making activities.

Case 2 is one of five studies documented in a multisite case study of digital technologies in adult literacy settings (Smythe, 2012), and describes the production pedagogy work of an adult learning center located in a semirural traditional farming and fishing community on the east coast of Canada. This learning center (Antigonish County Adult Learning Association [ACALA]) offers a variety of adult learning programs including academic upgrading, secondary school completion, employment preparation, and supported work placement. In the course of multisite case study of adult literacy and digital technologies, the first author was directed to the adult learning by the provincial literacy association because the learning center was exploring the use of digital storytelling and video not only as a learning tool but also as a tool for social change and sustainable employment. In the first stage of the case study,

the first author viewed the video productions the association produced and posted on their website, and interviewed the executive director (ED) about the social and educational origins and goals of this video production work. This was followed by a site visit to the learning center during videos production activities, where observations, further interviews, and artifact collection were carried out.

The research participants included the first author, the ED of the adult learning association, four professional filmmakers, and two adult learner apprentices (who later became project managers in various digital production activities). Drawing upon interviews with ACALA staff, adult learners, and professional filmmakers, as well as site visit field notes, analyses of video products and published articles about ACALA's work in local media, we describe the assemblages of people, tools, resources, spaces, and discourses involved in ACALA's video production efforts. The goal is to understand the affordances of production pedagogies of this kind, but also what made this work so hard.

Analysis

Workarounds in ANT. In interviews and participant observations, we attended to workarounds as instances wherein policy conflicts and contradictions were materialized in the actualities of people's collective efforts to accomplish a desired social goal, in this case, production pedagogies. These efforts may be thought of as "workaround stories" defined by Campbell (2011) as "accounts of deliberate efforts to evade, subvert, or even break the rules in order to get the job done" (p. 419). Workarounds, when "discretion is seized rather than granted" (Campbell, 2011, p. 410) can be seen as creative responses to policy flaws, and what people do to fix them at the local level. As mundane as they sometimes are, people's responses to constraints, frustrations, and injustices can offer insights into what policies and practices are in need of change if new activities or networks are to be enacted. Our cases also suggest that there are constraints for which workarounds are not available.

In this sense, the case studies below may be read as workaround stories, each highlighting when workarounds were necessary to enable production pedagogies. We then compare and contrast the analytic insights from each site to suggest possibilities for changing educational sites *enough*, that digital production pedagogies and new literacies in general, might become easier to practice.

Video Making in a Public School

The second and third authors have sponsored several video making projects with second language (L2) learners, agreeing with Lotherington and Jenson

(2011) that L2 learning can be enhanced through involvement in multimodal production. In 2010, we prepared a research proposal to examine video making by child L2 learners. Our proposal framed the problem the research would address as the literacy difficulties of L2 learners that were reported in the educational research literature (August & Shanahan, 2006); Strickland & Alvermann, 2004). We hypothesized that language and literacy learning could be enhanced for L2 learners through video making. Our proposal also called upon (attempted to enroll) the discourse of scholars who argue that multimodal literacies will be important for 21st century citizens. Answers that the research would provide were thus predicted to be of benefit to L2 learners and their teachers. In ANT parlance, our subsequent meetings with teachers and the children were framed by the particular *problematization* the proposal established. The *interessement* stage involved defining the community of interest as L2 learners and their literacy; they could, of course, have been defined differently, and in fact, in the course of our investigation, we did come to see these learners as experienced media consumers and emerging media producers, who could manage necessary English print literacy tasks in particular ways.

The teachers brought up the idea of making videos that had “something to do with the nearby park,” reasoning that this was something the children had in common, and we then determined that the project would focus on sustainability and social justice issues in the park. These themes had resonance with several of the Prescribed Learning Outcomes for the British Columbia Grade 4 Social Studies and Science curriculum. We conceptualized the project loosely on an educational approach popular with some in the provincial Ministry of Education and the District called “Challenge-Based Learning”³ (Apple Inc., 2013) and challenged the children in six groups (membership designated by the classroom teacher)⁴ to make 2- to 3-min videos on sustainability and social justice in the park.

Subsequently, the research project team engaged with the children on 14 different occasions (some all-day) over 3 months, at the end of which all six groups had produced videos. Before and during their video production, the children made several field trips to the park sometimes with and sometimes without facilitators from a park ecology society, and once with a First Nations tour guide who made them aware of the medicinal plants in the park and who spoke about the appropriation of land from First Nations and settler families, by the establishers of the park. The children also received lessons from the project team on sustainability, social justice, and photographic and filmic techniques. A retired local university professor who had written a book about the history of the park talked to the students, showing them photographs of and telling stories about First Nations and settler children who had lived in

the park and who had gone to the same school the project children were attending. After the professor's lesson, each group of children videotaped interviews with her. They viewed videos already on the ecology society's website and other videos made by children, had lessons on and practiced photography, interviewing, filmmaking, and editing.

The children shot photos and videos throughout the project, using the six iPads,⁵ we were able to supply and the Camera application that comes on the iPad, and later, the "Vizzywig" application for filming and iMovie for iPad editing, composing, narrating, and adding music to their videos. The research team shot "process video" throughout the project, took field notes, and aided children in groups as necessary.

Interviewed throughout and after the project, the teachers pointed out that they were impressed first, with the students' very high engagement in the project, and second, with the amount of print literacy the project entailed (scriptwriting, preparing interview questions, titling, etc.). They also commented on how the project allowed children who were not leaders in other classroom activities to "shine."⁶ They admired the resourcefulness of the students in using applications that either read text to them, or converted children's words into text (e.g., Dragon Dictation), especially when students had difficulty with written English.⁷ And finally, they noted that while the children had little to no experience working in groups the size of those in the project, and had no experience in working with the same group of children over an extended period of time, they were able to collaborate and make decisions and solve problems together. They felt that while this process involved disputes and hurt feelings at times, it was productive for the students to "work through" their disagreements. Interestingly, the children reported that the hardest part of making the videos for them was working with a group when individuals disagreed with one another. Most children agreed, however, with one child's assertion that this was an important part of making the videos better: "You get more ideas."

The children's videos were completed in the planned time, and we held a launch and invited parents as well as school district officials, the park ecology society education director, the professor, the First Nations guide, and administrators of the Park and the school. After viewing, the ecology society director requested that the videos be posted on the society's website and a representative of the park administration asked if they could be shown at an upcoming celebration of the park. The teachers, the children, and the research team were delighted with this visible "social use" of the children's work.

The university-based project team was not interested in assessment the individual videos, and did not construct rubrics or guidelines for that purpose. It was not apparent to us that children had any sort of ranking for them, either.

While there are beginning to be rubrics for assessment of child- and youth-produced videos, we agreed with Jenson, Taylor, and Fisher (2011) who observed that current assessment processes are not capable of evaluating the skills and competencies associated with 21st century learning. Such processes measure, as they pointed out, individual students' understandings and competences, but cannot evaluate students' "abilities to learn, work and produce collaboratively" (p. 13). While another reason for our decision not to use assessment in the project was that as researchers we were interested more in the process of production, we also felt that the children's appreciation for their own and others' videos might be compromised if judgments were made of them.

Despite not applying individual or even group assessments, the project could be seen as "successful" in the sense that each group of children had made a digital product of which they were proud. From the perspective of provincial grade requirements, they worked collaboratively to make these products and preliminary analysis of these English language learners' conversations suggests increases in oral language production and increased engagement in written language output (e.g., the length of texts and the children's willingness to edit for accuracy). These behaviors in themselves suggest enhanced learning opportunities for English language learners. As the project proceeded, however, our initial definition of the students as English language learners became somehow not as relevant as their experience with media, their creativity, and their engagement in the project.

The video making project was time-consuming, expensive,⁸ sometimes chaotic, and exhausting for the teachers and researchers⁹ (and we think for children as well). There are regular challenges of using multimodal tools in school that others have reported, like finding quiet places to work and managing the multiple interruptions that characterize life in schools (Burnett, 2014b). The project took a great deal of time and we were fortunate to work with experienced teachers who allowed us to work with the children for whole days or half-days, interrupted only for inflexible times for specialist subjects like Music and P.E., assemblies, announcements, collection of fees for various activities, and so on. We had to work around these interruptions.

At least partly because of limited equipment, decisions children made about their productions involved lively and loud debates; their classroom was small and the sound at best was distracting. A workaround to space constraints was to find unused classrooms in the students' large school in which to work, but finding such classrooms was never certain, and we spent a great deal of time looking for quiet places to plan and think, and later to record narrations. In some cases, we used corners of hallways in which to work, a workaround that went against traditional views of appropriate learning

spaces. We also spent a great deal of time searching the school for other equipment, such as extension cords, and functioning data projectors that were shared by many teachers.

Follow-up visits to the park were necessary to film shots that the students did not get on their field trips but later decided they needed. The university-based research team members were available to accompany the children, but district policy dictated that they must be accompanied by a School District employee, and such a person was not always available. It was difficult to find a workaround for this constraint, but we were sometimes able to supervise the children the school aide was responsible for, so she could accompany the Grade 4 students to the park to get needed footage.

Specifying workarounds in the network that emerged in this project could be endless: We needed to work around sometimes inadequate or flawed hardware and software, district policies, school space, school timetabling, photographic and videographic conventions and capabilities, and so on. In some ways, the project's network was a kind of counternetwork to School-as-Usual. School-as-Usual is, of course, a durable network that has enrolled a great number of actants over a long period of time. A remark by the classroom teacher on the last day of our project was characteristic for us of issues that we have been grappling with in all our digital projects with children. She said to a group of lively children working on editing their video, "You poor kids—next week, it's back to me and boring old school."

Framing the Case: The British Columbia K-12 Policy Context

Boring old school in British Columbia is like school in many parts of the world, but at the time of our project, in a state of flux. Our project, completed in 2013, occurred in a policy context in which British Columbia education is slated to become much more "21st century" than it has been. A 2011 Ministry of Education policy document titled *British Columbia's Education Plan* (EP) proposes,

We can make education more flexible so students and families benefit from the exciting knowledge economy we're part of. To do that, students must be at the centre of a more personalized approach to learning. They will still learn basic core skills, but they will also have more freedom to pursue their individual interests and passions within a particular topic. (Government of British Columbia, 2013a, p. 3)

While "staying solid on the basics" (defined as reading, writing, and math skills; Government of British Columbia, 2013a, p. 4), and subject area

knowledge that the EP calls “content,” it outlines that the new curriculum will put “more emphasis on key competencies like self-reliance, critical thinking, inquiry, creativity, problem-solving, innovation, teamwork and collaboration, cross-cultural understanding and technological literacy” (Government of British Columbia, 2013a, p. 4). It also outlines that current curriculum guides that mandate scores of learning objectives are to be revised to include “fewer but higher level outcomes” (EP, p. 5). At the same time that students are to be put “in the centre of their own education,” the EP promises improved and continued province-wide standardized student assessments, and assessment and regulation of teachers. In addition, the EP states that there will be increasing recognition of student learning outside of school settings.

Not everyone has greeted the changes proposed by the EP with enthusiasm. Some have been skeptical that anything much will change at all in schools, at least partly because there seems to be little or no funding to support teachers in building new curricular activities that integrate “content” and “competencies,” and no funding has been earmarked for upgrading technological equipment or Internet accessibility at the school level. Supporting “choice,” “flexibility,” and “personalization” in curriculum, but maintaining and improving province-wide evaluations of students in the “core” areas—numeracy, reading, and writing—seem somewhat contradictory. The promise of “a new system to regulate the teaching profession” (Government of British Columbia, 2013a, p. 5) shows that choice, flexibility, and personalization may not be at the top of the government’s agenda for teachers. The EP makes choice, flexibility, and personalization congruent with improved standardized testing, teacher regulation and the definition of “core subjects.” In ANT terms, this is an act of problematization that erases and smoothes the inconsistencies between these ideas and practices; an act of translation in the creation of a new teacher regulation network.

The EP notes that “B.C. leads the country on internet connectivity—85% of British Columbians use the internet on a regular basis” (p. 7) and sees future education encouraging the use of digital technology in schools, “better preparing students to thrive in an increasingly digital world” (p. 7). It notes a new agreement reached with a telecommunications company to “provide all telecommunications services for government [that] will allow for improved access to the Internet in BC schools” (p. 7).

While the EP notes that British Columbians are highly wired, access to the Internet in British Columbia schools has been recognized by many as a major concern. Indeed, one teacher observed in 2011,

[W]hen it comes to technology, [this school district’s] schools are an unmitigated embarrassment. Architectural features, for instance, make several

schools akin to digital black holes: carrier waves are blocked and technology stops working once thresholds have been crossed. These schools are throwbacks to a bygone era, a time before Wi-Fi, smartphones, and Facebook, and they are as anachronistic as betamax cassettes and drive-in movie theaters. (Steeves, 2011)

Despite the EP's commitment to promoting the uses of technology for students and educators, few practical actions seem to have been taken, other than the "new agreement with a telecommunications company."

Some have suggested that the Plan's endorsement of flexibility and choice (regarding how, when and where learning takes place) and the credentialing of outside school learning is a move toward "de-schooling" or removing social/governmental responsibility for educating the young. One observer has noted,

One might reasonably ask whether current proposals for innovation simply reflect a newly-emerging dominant class of knowledge-economy multinational corporations and high-tech companies, where de-schooling reflects outsourcing, and where privatization and technology-based learning offer rich rewards for the likes of Microsoft, Cisco, Apple, and others. (Naylor, 2011)

There are countless documents, websites, opinion reports, and citizen and stakeholder meetings concerned with British Columbia's EP. The discourse is heated and reveals various political affiliations. It is not clear from published sources what will happen to schools in the province as a result of the EP.

What is clear to us is that if change is coming, it hasn't come yet, at least to the school in which we conducted research, or to other schools with which we are familiar. Teachers are still working with curriculum guides replete with overwhelming numbers of learning outcomes; technology is used to some extent, but it is mainly used in special projects (like ours) that individual teachers (and/or researchers) devise and deliver. Students' learning is evaluated on locally developed and provincially mandated tests. And perhaps most importantly, as in England, the priorities of the curriculum, as stated in Ministry policy, are the "core" areas of reading, writing, and numeracy. Technology use is said in the EP to be a "key element," but it is not clear if or how use of technology will be integrated into "core areas."

British Columbia's EP might be seen as a "cultural artifact [that] circulate[s] through organizational structures, connecting different agents and shaping specific social interactions" (Hamilton, 2012, p. 16). In ANT terms it might be seen as an attempt to shape pedagogical interactions, and to enroll different actants (humans, technological tools, discourses) than might have been usual in schools heretofore. At the same time, the EP retains

aspects of the very stable network of School-as-Usual in British Columbia with the specification of “core areas” (real school) as reading, writing, and mathematics, standardized and individualized testing of “skills in core areas,” “regulation of teachers,” and government specification of learning outcomes. “Technology use” as defined in the EP is “purified” so that it can function effectively as a desirable attribute within the 21st century learning vision without challenging the privileged practices surrounding School-as-Usual.

Arguably contradictory and seemingly difficult to implement, the EP does not appear to promote equity for minority language speakers, culturally non-mainstream, or differently abled students. As Star (1986) pointed out,

A stabilized network [like School-as-usual] is only stable for some, and that is for those who are members of the community of practice who form/use/maintain it. And part of the public stability of a standardized network often involves the private suffering of those who are not standard—who must use the standard network, but who are also non-members of the community of practice. (p. 44)

British Columbia’s EP might be seen to support a project like ours that was flexible, connected to core areas of learning (at least as presently stated in curriculum guides for Grade 4 Science and Social Studies), involved outside agencies, and required on the part of students many of the critical thinking, problem-solving and teamwork skills envisioned in the Government of British Columbia’s EP. However, at the time of our research, engaging in such pedagogies required multiple workarounds to support what seemed a very fragile network.

Case Study: Video-Production and Adult Learning

ACALA is a community-based learning center in Antigonish, Nova Scotia offering a variety of adult learning programs including academic upgrading, secondary school completion, employment preparation, and workplace training. Antigonish is traditionally a fishing, farming and mining village of 5,000 permanent residents with a large university student population. It is home to the Coady International Institute (CII), a community development institute established in 1959 based on the work of Jesuit Priest Father Coady who organized around the social gospel movement within the Catholic Church in the 1930s. The principles of the movement included a group action approach to education, through which people affected by economic difficulties were seen as the architects of the solutions to these problems (CII, 2013, para. 4).

A CII student, Brazilian community educator Heitor Maia, introduced ACALA’s ED to the processes and potential of participatory video

production to support expanded literacy and learning opportunities for adults. The forms and processes related to participatory video vary, but an inclusive definition is “an iterative process, whereby community members use video to document innovations and ideas, or to focus on issues that affect their environment” (Cohen, Salazar, & Barkat, 2008, cited in Corneil, 2011, p. 17). The process of participatory video production is aligned to the values of the CII of “education for group action,” and audiences for participatory video productions are often policy decision-makers and community members, with the goal to “provoke collective action” (Mitchell, Milne, & de Lange, 2012, p. 1) and instigate policy and social change.

The ED of ACALA saw the potential for participatory video making to provide adults in the community, many of whom were current and former adult learners at ACALA, with “not only a voice, but a platform” to educate more affluent community members, policy makers and local government about the vital issue of housing affordability at the root of many other socio-economic challenges in the community. This was particularly appropriate in a sociopolitical context in Antigonish in which the effects of housing insecurity were largely hidden from the view of more affluent community members, and in which the causes and solutions to the problem were often decided by agency and government groups without the perspectives of those who experienced housing insecurity. The ethos and principle of “education as group action” was sponsored by the continued work of the CII in the community and was thus enrolled as a powerful actant in the emerging video production network described here.

ACALA applied for funds from a private nonprofit agency to hire local professional filmmakers to train adult learners in digital video production methods so that they could in turn lead participatory video projects in their communities. But ACALA required provincial government funding to support the participation of adult learners in the form of an employment training wage. To qualify for these essential funds, ACALA needed to demonstrate that within 3 to 12 months of participation in video making workshops, adult learners (enrolled as “clients” by the provincial government) were “attached to the labour force, had new levels of certification, and/or increased average hourly earnings” (Employment and Social Development Canada, 2010, Annex. 2, Sec. 25). These performance indicators were particularly difficult to meet in a region with an unemployment rate of 8%, depressed wages, and where the video production participants, some with newly acquired school completion certificates, competed for jobs with professionals with degrees and years of employment experience.

ACALA thus found itself caught between the accountability regimes of government-funded training oriented to (often poorly paid and unstable)

entry-level jobs, and the slower paced learning embedded in participatory video production that ACALA believed lead to deeper learning and proficiency on the part of learners, and so more sustainable employment with valuable social ends. How were ACALA's learners, with little formal education, to find sustainable employment in their communities? And how could the social ends of learning be reimaged to capture the imaginary (Hamilton, 2012) of the Antigonish movement's "education as group action" and the goals of participatory video production?

ACALA's strategic response, or workaround, to these conflicts was to establish itself as a social enterprise (called ACALATV) and join with other community partners to secure additional private funding to make a series of videos about housing in Antigonish. The first video titled *Affordable Antigonish* premiered at the Antigonish Film Festival and the second, *Looking for Change* was released in early 2013. Both films were aired on local cable TV channel *Eastlink*. Access to funding from a private nonprofit organization allowed ACALATV to acquire high quality camera equipment and to hire local professional filmmakers to work alongside adult learners who were hired as paid apprentices in these productions. Both these expenditures would have been disallowed in government-funded projects.

Carriff Shabala, a recent graduate of ACALA's General Education Diploma (GED) was one of the apprentices employed to work on *Looking for Change*, with producer Deborah Jenkins. Shabala drew upon her own difficulties finding affordable housing for herself and her young son, as well as her social networks among friends and neighbors with similar housing challenges, to set up and carry out interviews for the video that represented the diverse housing needs of the community. Based on the principle that within the collective experiences of community members are solutions to the housing problems, the video shows Mi'kmah elders and their council members sharing the difficulties accommodating their growing population on reserves,¹⁰ young families expressing the stresses of having to move continually to avoid rent hikes and seniors describing the struggle to keep up with increased property taxes and rents on their fixed incomes.

In a local newspaper article reporting on the public debut of *Looking for Change*, Shabala is quoted as a member of the production team who contributed technological skills (setting up camera shoots and locations) as well as experiential knowledge of housing insecurity in her community. In the article, Shabala noted that housing issues touch everyone in her community but "a lot of people in authority just don't seem to notice" (MacKenzie, 2013, p. A10). She emphasized that the interviews she helped to carry out for *Looking for Change* supported her to see housing issues from many different perspectives: "Interviewing the people was incredible because you really get to see

the emotion that comes out when they're talking about something they are passionate about" (MacKenzie, 2013, p. A10). Here she synthesized people's experiences in relation to official policy and noted the discrepancies between these policies and local experiences: performing analysis and critique using a range of oral, print, and visual texts. This *enrollment* of Shabala as a knowledgeable member of her community authoring productions of social value is distinct in many ways from the casting seen in provincial government policies of adult learners as "clients" in need of literacy skills upgrading.

In addition to working on *Looking for Change* Shabala also produced *Digital Story Telling: Education for Action on Housing*, a montage of images and narrative highlights from the housing video series, featuring cameos from the interviewees as they stood in front of their homes and apartments. The first author and Shabala watched her digital story in the ACALATV offices one summer morning, viewing the images and listening to Shabala's voice-over narrative as we discussed the achievements and challenges of the video making project. Shabala explained her rationale for the inclusion and ordering of images, and which interviews proved the most interesting and difficult. As he passed her workstation, one of her colleagues, sound engineer Bryan Melanson, pointed out a spelling error in a subtitle. Shabala casually corrected it as we continued to discuss her story. In contrast to traditional literacy upgrading classes for adults, spelling accuracy was not a focus of instruction, but rather one of the many details to attend to in the context of the production process.

Philip Girvan, ACALATV Program Manager, wrote in the ACALA newsletter that adult learners and filmmakers alike engaged in complex literacy and learning practices without necessarily "seeing" these as literacy or learning. Such skills include "news gathering, reporting, interviewing, scriptwriting, storyboarding, photography, videography, editing, public speaking, production values, live streaming and thinking on one's feet to solve problems that inevitably arise" (Girvan, 2012, p. 6). Girvan observed that it was not until many adult learners saw their video products shown on the local cable channel *Eastlink*, or at the Antigonish Film Festival that they began to see the value of their own work.

Certainly, those participating as apprentices in the video making projects were not the only learners in the process. As the ED of ACALA observed in her role as executive producer of ACALATV, everyone involved in the video production ventures was challenged in the practices of collaborative work: compromise, sharing power and control, accepting and integrating differences of opinion and creative visions, and addressing the everyday life challenges of the team members that inevitably shaped the production process. People had to learn (and continue to learn) through experience and through

the relations of trust that developed as each film was made, and each new project was launched. These are not skills easily taught in isolation, nor in short-term training programs oriented to individualized assessment of print literacy acquisition. Literacy skills were learned in the doing of the work.

Now as a fledgling social enterprise, ACALATV has to pay attention to the quality of their products to earn new contracts and audiences, so central to their goals of sustainability. Bryan Melanson named this dilemma: “How can a group oriented to creating a sustainable social enterprise and a context for stable workplace and community development education distinguish itself when everyone is uploading to the web (some not so great) content to ready-made audiences?” (B. Melanson, personal communication, July 17, 2013). And yet, how can the organization also maintain a legitimate space for the voices of adult learners and their lived experiences, as well as a role for apprenticeship and mentorship in a professionalized production process? ACALA continues to explore strategic responses to these challenges as it forges new networks of production pedagogies within and against the constraints of the durable network of Adult-Literacy-As-Usual.

Framing the Case: Adult Literacy Policy Networks

ACALA’s project exemplified production pedagogies, linked to powerful social ends that included material outcomes of employment for several community members, new skills and working relationships across different networks, and a pathway to more equitable housing policies. But it was not easy. The processes of incorporating participatory video into ACALA’s learning activities illuminated the contradictions in adult literacy policies in Canada between the affordances of digital production for learning toward meaningful social ends, and short-term funding for skills training oriented to the consumption of alphabetic print-based texts for the purposes of entry-level employment or “attachment to labor force.”

As Thacher (2011) observed, “In digital skills as well as other literacy skills, there are the basics that help you survive, and then the more critical thinking and deep skills that help you thrive and excel” (p. 2). Although ACALA’s ED felt that video production led to deep skills that helped people “thrive and excel,” in many ways, this video production project was in conflict with prevailing adult literacy policy and skills discourses in Canada. This is not to say that ACALA broke rules, but rather that at each turn, it had to work around funding and accountability regimes that privilege a “minimal proficiency” orientation to adult learning in which the goals of training are either an entry-level job or proficiency in literacy to “Level 3” which the Canadian government deemed the minimum threshold to participate in a

knowledge economy (Human Resources and Social Development Canada, and Statistics Canada, 2003, p. 9).

Canada's Literacy and Essential Skills (LES) framework (Employment and Social Development Canada, 2013) is a powerful and ubiquitous organizer of adult literacy education work in Canada and may be seen as an "obligatory point of passage" (Callon, 1986) through which literacy organizations reliant upon government funding must pass if they hope to receive funding for their work. The LES framework is predicated on a linear model of skills development (nine separate skills, each of which embeds increasing levels of task complexity from Level 1 to Level 5), oriented to the consumption, rather than the production of texts (St. Clair, 2012). Among the nine essential skills are "computer skills," "reading," "writing," "problem solving," "thinking," "working with others," and so on with possibilities for combining one or more skill in a task, but without a sensibility of the infusion of practices in situated contexts. Within this framework, adults deemed to have low literacy skills (categorized as Level 1 and Level 2, or 42% of Canadian adults) are said to first require "building blocks" of traditional print-based reading (such as word recognition and fluency) before they are able to engage meaningfully with digital technologies (Chinien & Boutin, 2011; Organisation for Economic Cooperation and Development [OECD]/Statistics Canada, 2011, p. 309). Chinien and Boutin (2011), in a report to the Canadian government about the integrity of the essential skills framework in a digital culture, argued,

Foundation skills refer to gateway basic literacy and numeracy skills components for which there is often or always a minimum proficiency level required before someone can engage with digital technology and demonstrate or develop the more precise digital information processing skills. (p. 30)

The discursive logic of this "minimal proficiency" framework was materialized in funding rules linked to accountability measures mandated by the Federal Government and distributed through provincial employment programs such as those in Nova Scotia described above. As in our example of video making in the Grade 4 classroom with English language learners, how people are enrolled in projects seems to matter. The enrollment of learners as "clients" in need of "minimum proficiency" literacy skills, seemed less relevant in the network of video production than people's knowledge of the social and political life of their community. Here, too, the history of the community in "collective group action" was mobilized to provide residents, so-called learners and others, with a voice and platform to challenge housing policies and decision-making practices that excluded people "at the margins."

ACALATV's work relied upon capital investment in digital means of production for video making: the cameras, computers, editing software, microphones and lighting that made possible employment creation. Such investments are normally disallowed in provincial and federal literacy funding. The ED managed to secure funding for their video making equipment through a one-time provincial government grant at the end of a fiscal year in which funds had to be used quickly. While this was certainly appreciated (and a function in many ways of sheer luck), there was no provision for the maintenance and updating of equipment. Moreover, although job training was the central activity of employment programs for adults receiving unemployment insurance or income assistance, hiring local professionals to mentor trainees was not a legitimate expense, even though apprenticeship and mentorship in actual work settings are powerful forms of learning.

ACALA forged production pedagogy networks by "escaping" government funding rules and accountability regimes whenever possible. This came about as a result of workarounds to access learning resources not eligible under government funding rules. These workarounds involved seeking private funding sources (which are limited) but also through complex relations of mutual exchange among community partners, such as in-kind contributions, resource sharing, and other forms reciprocity in which the same pockets of money and human resources seemed to circulate among nonprofit organizations in the Antigonish community. While these industrious and creative responses should be celebrated, they are also exhausting and seemingly endless, taking personal tolls on the people involved and taxing already burdened community resources. Canada's "minimal proficiency" alphabetic print literacy network is well-established, dense, and powerful. Adult literacy educators who strive to democratize access to powerful uses of digital technologies and other literacies must be prepared to engage in significant workarounds. As the video making experiences of the Grade 4 class that the second and third authors described, this often comes down to the vision and persistence of individual educators, and the creative and contingent enrollment, interestment and mobilization of people, tools, practices, and counterdiscourses through which video production networks tenuously emerge. Even as glimpses into the power and potential of new networks of production pedagogies come into view, these new networks remain fragile.

Discussion: Conflicts and Creativity—Working the Spaces of Workarounds

Our goal in presenting these case studies was to trace the actualities and difficulties of video production work in educational settings, so that we can

begin to think about how things could be different (Clarke, 2002, p. 107). In both of the studies we elaborated, curriculum frameworks emerged as obligatory points of passage (Callon, 1986; Fenwick & Edwards, 2012; Law & Hetherington, 2011). For example, in the school district in which the Grade 4 video making project took place, curriculum is enacted through prescribed learning outcomes and assessment modes that privilege print-based literacy and “core skills” as individual reading, writing, and numeracy.¹¹ While the videos children were making actually did relate to curriculum goals, they were not seen as “real school,” perhaps because prescribed texts that presented “facts” were not used in the pedagogy, and no individual evaluation accompanied the activity. We believe that production pedagogies in classrooms will remain a fragile network until assessment frameworks linked to the learning outcomes are in place. Similarly, in adult literacy and basic education programs in Canada, funding requirements, accountability regimes, and client-centered program outcomes must align to the LES framework, which requires the demonstration of competency in terms of basic employment readiness or “minimum literacy proficiency,” even as good jobs increasingly call for critical and multimodal literacies oriented to collaborative problem solving. Once again, until more robust learning goals and resources are established for adult learners, video making and other production-oriented activities will persist in the realm of “special projects.”

Rather than seeing these difficulties as insurmountable, we have identified three nodes in the networks of schools and adult literacy policy where these contradictions and ambiguities were most intense, where workarounds were most visible, and so where new pressures may be brought to bear on existing policies and practices. How people are enrolled in networks of production, how resources are distributed and how spaces are allocated are three of the nodes in current educational networks that are most in need of change if production pedagogies are to become more extensive or common. We elaborate our view of what we think should happen below.

In the first network node, both British Columbia’s EP and the LES Framework, learners, children, and adults alike are problematized as deficient in the literacies and knowledge required for their everyday lives. Powerful symbolic objects such as the “struggling learner,” “vulnerable youth,” “low-literate adult,” and “second language learner” are enrolled and mobilized in pedagogies oriented to preparing people for social and economic worlds they already inhabit. The discursive designation of people as language deficient or “low literate” has material and education effects in formal education settings in that people are seen as not able to benefit from access to digital technologies until they have reached proficiency in alphabetic print literacy. Meanwhile, people viewed as more educated or skilled,

and those with the material means, are more likely to have sustained access to digital tools for production (Hoeschmann & Poyntz, 2012). In the production pedagogy networks we observed, people were enrolled as competent meaning-makers and knowledgeable experts in their own lives and experiences. This recasting spurred new learning identities and the incorporation of new objects and actants (iPads, cameras, TV networks, filmmakers and historians, park and film festivals) that reconfigured “school-as-usual” or “adult-literacy-as-usual” and challenged the symbolic power of the “deficient learner.” Changing how learners are enrolled in particular projects will require that policy documents and educational discourse generally, consider that resources and actions flow from how people are defined as learners. We are aware this is a massive ideological project about the purposes and goals of public education. This brings us to the second node of conflict in production pedagogy: How do people get their hands on new tools for production?

In both case studies, digital tools and the resources to use these tools for productive ends proved expensive and awkward. The second and third authors bought the iPads children used, knowing that using scarce school iPads which must serve many classes, would not have allowed the project to proceed. The authors noted the reliance in the British Columbia EP on the philanthropy of corporate benefactors to make digital technologies more widely available in schools. As the experience of ACALA suggested, digital technologies for production are not regarded as necessary to the goals of minimal proficiency literacies in adult literacy policy. Indeed, for the production pedagogies we documented in these studies to exist at all, actors had to acquire resources outside the school and adult literacy programs: to go off the grid as it were.

Privatization and the push to social entrepreneurship were thus means to escape these constraints and others have observed that it is sometimes in after-school and community-based programs not tethered to government-mandated curricular and accountability regimes that we may find examples of creative learning using digital tools (e.g., Chávez & Soep, 2005). The workarounds in the two case studies demonstrate “how things could be otherwise” (Clarke, 2002, p. 17), but if they remain “off the grid” they are likely to reproduce inequalities in access to powerful literacies (and exhaust their sponsors). This tension leads to our second recommendation that educational policy makers make available 21st century learning tools to support their 21st century learning plans.

These difficulties in acquiring digital technologies and resources for production pedagogies revealed a third node of contradiction and possibility within the time-space organization of schooling. The configuration of

learning spaces and learning time-scapes (Burgess, 2010), the black/white boards, desks and four walls, clocks and maximum allowable hours to “go up a literacy level” in the case of adults, are themselves actants in the production of “school” and “print literacy” as usual. Quiet space to produce or edit sound, time and room for collaborative work, and time to integrate new skills and mess about with technologies to learn their affordances in authentic settings had to be improvised and “worked around.” This leads to our third recommendation for the reconfiguration of traditional schooling spaces and time-scapes to enable collaborative work, experimentation and the learning of new literacies. This again is no small adjustment, yet central to the enactment of new networks of production pedagogies.

Summary and Conclusion

We have considered in this article two cases of digital production pedagogy. We documented difficulties of conducting these pedagogies, and described participants’ workarounds, as the setting up of alternative networks of human actants, technologies, discourses and practices toward production pedagogies. While these networks are necessarily frail, they suggest possibilities for educational change that is said to be necessary in educational policies. Following Bloom’s (1994) insight with which we opened this article, if real change in learning is desired in the 21st century, then it is not enough to append digital tools to existing print literacy and minimal proficiency regimes, and so “change things just a little so that things remain the same.” It may be more powerful to bring policy and practical attention to how learners and literacy are defined, to patterns of access and distribution of valued technological tools, and to how space and time are organized and audited within curricular and assessment so that “learners us[ing] new media [can] take increasing control of their lives and engage critically with the world around them” (Burnett, 2014a, p. 2).

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Notes

1. Pennycook (1989) reminded us that the 16th- to 17th-century educational theorist Comenius continually stressed the dictum “you learn by doing”.
2. It should be noted that Dewey’s ideas included multimodality: “When it is said, however, that thinking is impossible without language, we must recall that language includes much more than oral and written speech. Gestures, pictures, monuments, visual images, finger movements—anything consciously employed as a sign is, logically, language. To say that language is necessary for thinking is to say that signs are necessary” (Dewey, 1910, pp. 170-171).
3. We do not have the space to describe this approach in any detail here, but it obviously has enrolled human actants in the Ministry of Education and British Columbia schools and its website shows some of the textual actants in the network as well. It is sponsored by Apple Inc. and is described on its website as “an engaging multidisciplinary approach to teaching and learning that encourages learners to leverage the technology they use in their daily lives to solve real-world problems.”
4. Four of the groups had four children in them and two of the groups had five children in them. These rather large groups were necessary as the equipment budget for the project had been cut by the funding agency, and we were able to purchase only six iPads.
5. We have in previous projects used high end cameras and “FinalCut Pro” for editing, but we reasoned that because schools seem enthusiastic about iPads, and because the quality of the video taken on them is quite good, there was more likelihood of teacher take-up of the activity if the equipment were more readily available, and the editing technology rather straightforward. We are learning, however, that the affordances of particular tools are not the only factors important in whether (and if so, how) they are used or not. The fact that we were only able to afford purchasing six iPads had consequences we describe later.
6. An example of this was a girl who took a leadership role in her group in proposing ideas for the video, and was able to explain with confidence and poise to adults attending a District-sponsored “technology fair” what the project entailed. During the time of our project, after testing by District personnel, this girl was designated as needing “special education” because of her difficulties with print literacy.
7. This was a workaround initiated by the children.
8. Costs included the purchase of the six iPads that could remain in the classroom and did not have to be shared with other classes, fees for the nonprofit Ecological Society field trips, and per-person fees for the fledgling First Nations tour company.
9. As participant observers in an ethnographic study, we on the research team realized that we were participating rather heavily: planning a project that touched on several “learning outcomes” of the provincially mandated curriculum for the children’s grade, instructing children as a class and in small groups, observing children as they engaged in various tasks, encouraging children who were

- reluctant to write scripts or plan in any form, trouble-shooting equipment failures, arranging for guest speakers and field trips, adjusting class activities in response to children's observed reactions to earlier activities, paying for teacher release time needed for planning, and maintaining a research focus. As much of the children's activity occurred in the small groups, and it was impossible to predict exactly what issues would arise in each group, and when, having several adults to mediate children's production processes (when such intervention was helpful and did not obviate children's opportunities to learn from conflict), became readily apparent.
10. Reserves are legally defined under the Canadian Indian Act as a "tract of land, the legal title to which is vested in Her Majesty, that has been set apart by Her Majesty for the use and benefit of a band" (Government of Canada, 1951, sec. 15). A *band* is an antiquated term that refers to Aboriginal people belonging to a linguistic and cultural group, or First Nation, in this case the Mi'kmah First Nation. Reserves were created by the Indian Act of 1867 through processes of settler colonialism.
 11. It is not clear, for example, that schools are ready to embrace the affordances of technologies that read aloud or scribe for learners who may encounter difficulty with decoding and/or producing printed language.

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