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TABLE OF CONTENTS / SOMMAIRE

FALL 2014 VOL. 49 Nº 3 / AUTOMNE 2014 VOL. 49 Nº 3

> Now is the time to search for seas that take us beyond the comforts of old ports
> (Eisner, 1993, p. 8)

In 2013, we (Anila Asghar, Teresa Strong-Wilson, and Amarou Yoder) invited submissions on Multimedia in / as Scholarship for a special issue of the *McGill Journal of Education*. The call came in the wake of the increasing proliferation of multimedia tools within scholarship yet the relative paucity of multimedia within scholarly articles. We wanted to see what kinds of submissions we would receive in response to an invitation to submit pieces that creatively engaged with multimedia, or with the embedding of multimedia, within scholarship (e.g., artful visual and / or audio artifacts or productions, blogging, digital storytelling, imovies, podcasts, photoessays, photographs, social media, wikis, etc.). We were open to various disciplines within education and various methodologies. Some questions that we had flagged as important were: How are digital technologies influencing the direction of research and publishing? In what ways are they changing our notion of what counts as scholarship? What do digital technologies / multimedia allow us to see, hear, that we may not otherwise be able to? What are the ethical considerations around the issues of representation and voice, particularly in terms of constructions of subjectivities? How do these ethical issues shape research and representation?

Through the process of guest editing this issue, we found our minds casting back to Elliot Eisner's pivotal piece, first published in 1993 in AERA's flagship journal, *Educational Researcher*. Entitled "Forms of Understanding and the Future of Educational Research," Eisner defended the presence of qualitative research in education and especially, of arts-based methods. The questions around representation that informed the piece marked a crossroads in educational research, a place where, given the great influx of multimedia, we find ourselves again today. Eisner understood representation as a public form for consciousness or intent; representation gives form to thought, such that representations can be "stabilized, inspected, edited, and shared with others" (p. 6). Eisner fastened on computers as the next horizon in representation, suggesting that they will enable us to display "meanings that might otherwise elude us" (p. 6), especially given their ability to represent matters synchronic-

ally (e.g., visually). He pointed out that there is little value in a "monolithic" approach to research (p. 8). Meanings are plural so their representation ought to also be multiple (e.g., painting, sculpting, drawing, writing, singing, etc.). He asked, "what would an entirely new array of presentational forms for research look like?" (p. 10). Further, how might multiple forms of representation (e.g., film, song, painting, novel, etc.) be used to access students' understandings by various pathways?

These are fundamentally the same kinds of questions that animate this special issue and where, playing on the title of Andrew Piper's (2009) *Dreaming in Books*, we in academe are also beginning to dream in, and through, multimedia. Like Eisner, Piper argued against one medium to express scholarly understanding but whereas the digital ought not to displace the book by becoming in turn the new monological norm. Rather, Piper suggested, we are poised at a time and place where different possibilities exist; where different "media themselves generate very different experiential spaces and encounters" (p. 240). The articles in this issue explore these possibilities, where the extant responsibilities of education — e.g., classroom practices, practica, community partnerships, curricula, research practices, and communication — find new expression in and through the affordances of multimedia tools and representations as discussed and represented in and through the "classic" academic article.

We are pleased to offer nine "articles," two Notes from the Field as well as one *MJE* Forum. We say "articles" in scare quotes because our first piece comes in the form of a podcast: Ted Riecken's rumination on the questions from our call for papers. Riecken, professor in the Faculty of Education at the University of Victoria in British Columbia, and former Dean of the Faculty, has worked extensively on research projects involving youth, social issues, and new media but has also been informally exploring the form of the podcast. The podcast presented an interesting problem for peer review for us at the *MJE*, given that it depends on being heard rather than being read. The quality of the voice inheres in the spoken word. Two versions were produced, one in which the author / speaker acknowledged who he was, and the other in which he did not disclose his name (yet was potentially recognizable by voice). By some fortuitous accident, the version sent out for peer review was the non-anonymous one, which opened up an opportunity for the reviewers to offer to respond directly to the author / scholar / podcaster. In fact, the three of them got together and had a conversation about the seminal questions informing this special issue. We are pleased to offer both the podcast and the *MJE* Forum, in which Ted Riecken, Anthony Paré (specialist in academic rhetoric and former journal editor of the *MJE*) and Carl Leggo (accomplished educational scholar, poet, and performer) engage in animated conversation around questions of multimedia in / as scholarship, including implications for peer review, tenure, and promotion.[1]

Each of the other articles is now briefly summarized in turn.

Noting the ease with which some scholars use digital video in their research and pedagogy, Bangou discusses the affordances of such technology in light of Deleuze's concept of agencement and through rhizoanalysis of two vignettes from the author's scholarship and life. Such theoretical and methodological commitments facilitate "thinking in" as opposed to "thinking about" the research. The use of digital video shifts from convenient tool to integral to the research agencement, impacting and being impacted by the researcher and participants. In this way, the conventional position of interpretative mastery in research and analysis is undermined, provoking spaces for creative possibility.

Petrarca and Hughes address multi-modality and the academy through an exploration of documentary film-making as scholarly work. Positioned in light of the "publish or perish" climate of contemporary academia, where the print-bound research paper has represented the gold standard of reputable scholarly communication, they consider the defining elements of documentary film-making as scholarly work. In thinking through the credibility of documentary filmmaking as a scholarly endeavor, they explore commitment to the medium, methodological integrity, the creative inquiry process, and the subjectivity / reflexivity of the researcher, among others. The authors conclude that documentary film-making markedly improved their scholarly work, particularly with regard to the interpretation of data and appeal to audiences beyond the confines of academia.

Smith, Ng-A-Fook, and Corrigan pursue the utility and implications of m-learning (mobile learning) for historical literacy, especially as regards counter-narratives and under-represented or forgotten histories, such as the history and legacy of Residential Schools in Canada. Following the development of an application, RNMobile, and its early implementation, the authors explore the nexus between the technology that pervades our daily existence — mobile technologies — and the potential for harnessing such technologies for fostering critical historical awareness, or, as the authors put it, a "technopolitics of decolonization." Such technologies, they contend, also facilitate personalized, flexible, and authentic opportunities for learning.

Schwab-Cartas and Mitchell explore the affordances for autonomous representation that cell-based technologies (cellphilms) and digital video cameras offer to Indigenous communities in rural Mexico and South Africa. Through a polyvocal and dialogic narrative approach, the authors share the production stories, uses, and reception of films created by members of the communities with which they are participating. They also reflect on the impact of such technologies for knowledge production and transfer within such communities, as well as from such communities to other Indigenous communities and the rest of the world.

Grushka, Bellette and Holbrook take up the challenge of nurturing critical and reflective multimedia education, both as scholarly endeavor and as pedagogy, through the use of a variety of multimedia tools. They posit Photographic Participatory Inquiry to explore critical reflection upon the making and use of digital images. Their method involves three stages. The first uses a Go-Pro camera on the head of the person to take the initial image. The second stage uses video screen capture technology for reflection on the image after it has been selected and is in editing. The third stage incorporates e-journal reflection and collaborative dialogue between instructor and student. In the end, student and instructor might use to the digital record of the creation of the image to consider choices made during the production process and reflect on their learning. The authors present this Go-Pro method as having potentially profound implications both for teaching practice and as a research methodology.

In the context of teacher education, Radford and Aitken take up the ways in which beginning teachers' multimodal representations allow teacher educators to address the question: "What should our response be to becoming teachers' moments of pain related to their practicum experiences?" Using digital stories based on beginning teachers' engagement with critical moments during their practicum experiences, the authors theorize the psychic and social demands elicited by such experiences. They note that such critical moments often intersect with what is painful, forbidden, or unspeakable, especially when engaging with difficult issues. Attending to the melodramatic mode of the digital stories, Radford and Aiken suggest that such digital tools provide beginning teachers with the opportunity to symbolize their fears and anxieties, while at the same time teacher educators can constructively engage with often overlooked or ignored, but deeply powerful, emotions through a medium that lends itself to exploring such issues in new ways.

While the use of media production has increasingly come into vogue in teaching and learning, especially in K-12 and teacher education, Yang asks the important question, "what are students actually learning?" Situated in the context of teacher education, Yang explores this question by reflecting on the use of video production to foster community-engaged scholarship among beginning teachers. Using a case-study approach, as well as her experience working with video production in community-based learning, she assesses the implications of video productions for fostering what she calls implicated scholarship. She concludes that the difference in learning outcomes for community engaged scholarship is substantial when students are actively creating original video versus merely borrowing from existing media.

As teachers, teacher-educators, and researchers engaged in current and past digital memory-work projects in Canada and South Africa, Strong-Wilson, Mitchell, Morrison, Radford, and Pithouse-Morgan inquire into the purposes and implications of such memory-work for the digital. Using a framework drawn

from Michael Rothberg on multidirectional memory, the authors explore how such a conception of memory might, through its use of juxtaposition, serve to build resonances and connections between seemingly disparate personal and collective memories, especially those involving trauma and injustice. They also raise associated questions about the production and dissemination of digital forms of such memory-work. The authors use such questions to "reflect forward" on the challenges posed for and by their research projects with teachers and teacher-educators.

We offer two Notes from the Field. Neupane shares his inspiring work of using digital tools in rural communities in Nepal to inform science teaching and learning. His innovative work involves improvising cutting-edge technological tools to create an electronic library for students and teachers. These e-learning platforms use affordable software (e.g., Raspberry Pi) and open-source online resources (e.g., videos, animations, podcasts, pictures, and Wikipedia) to enhance exposure to scientific ideas and materials. Neupane notes that "establishing an e-library in Jhimpa has opened up sources of knowledge to students who never had access to a library before." These e-libraries — powered by a local micro hydro plant — generated considerable excitement among teachers and students as well as administrators and teachers from neighboring villages through the productive use of multimedia for fostering curiosity and scientific literacy among youth. We look forward to future contributions looking at the transformational potential of multimedia in informing teacher education research and practice in these and similar communities.

Deutsch, Woolner, and Byington reflect upon the use of digital storytelling in working with communities whose members experienced trauma or legacies of trauma. The authors facilitated and / or were participants in a project at the Native Women's Shelter of Montreal. In the project, the women, many of whom had experienced life on the streets of Montreal, were given digital cameras and technical / artistic support to capture their views of the city – the people, the geography, the architecture, etc. The authors explore participants' photographs and narratives, highlighting the ways in which the aesthetic viewpoint of digital storytelling supported the participants' meaningful re-tellings of otherwise difficult situations.

By way of final thoughts, we note that this special issue has marked its own juncture: a milestone in the *MJE*'s more complete transformation into an open access, online journal. We engaged more substantively with the question of what it means for us to be a digital journal, including foundational technical issues. We were led to questions like: How might our digital form change what it is that we are about as an academic journal? Would it allow us to do different things and if yes, how? For instance, will a digital platform lead to what is being called "enhanced publishing" or the incorporation of the web into scholarly publishing (Jankowski & Jones, 2013, p. 349)? For their part,

what kinds of new and old expectations will our readers / reviewers / users bring? What kinds of "gates" or "filters" might they be using to decide what to read / download / interact with as well as how to make sense of what they are reading (Das & Pavličková, 2014, p. 394)? How might multimedia texts begin to shape response differently?

These are the kinds of questions that many journals are asking, and where, as John Willinsky (2006) has pointed out, journals (more than books) stand at the forefront of digital change in scholarship, in large part because of the open access movement. This movement reminds us that academic knowledge is publicly funded, through research grants, professors' salaries, or graduate scholarships and awards, and ought to be made accessible to the wider public, and where the Internet and the changes it has wrought in the structures of universities, libraries, and other institutions has helped fueled this change. What does it mean, then, to be digital *and* open access? How do both of these influence scholarly representation? And, coming back to Eisner, who concludes his article by asking that perennial question we ask ourselves as educators — what difference does this make? — how does this conversation about multimedia and representation affect students and teachers, classrooms (university, pre-service education, schools), informal and non-formal places of learning, educators, writ large? We are interested to hear your responses, either directly to the journal (mje.education@mcgill.ca) or in the form of the submission of an article, Note or Forum, including submissions in French. The skies (seas) are the limit!

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NOTES

1. The *MJE* Forum was best presented as a transcribed text to make it most accessible to *MJE* readers. Ted Riecken's podcast is also available as a transcribed text, upon request (mje.education@mcgill.ca).

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ÉDITORIAL

> Il est désormais le temps de partir en quête d'océans nous amenant au-delà du confort des ports familiers.
>
> (Eisner, 1993, p. 8)

En 2013, nous (Anila Asghar, Teresa Strong-Wilson et Amarou Yoder) avons lancé un appel pour recevoir vos soumissions d'articles en vue de notre édition spéciale de la *Revue des sciences de l'éducation de McGill (RSÉM)*, édition portant sur le multimédia en recherche ou comme méthode de recherche. Cet appel s'inscrivait dans le contexte de la relative rareté du multimédia dans les articles universitaires et ce, malgré la prolifération croissante d'outils multimédia utilisés en recherche. Nous désirions voir la nature des articles soumis en réponse à notre invitation à envoyer des textes présentant une démarche multimédia créative ou intégrant le multimédia au sein d'un projet de recherche (p. ex. représentation artistico-visuelle et / ou artéfacts ou productions audio, blogues, récits numériques, *imovies*, baladodiffusions, reportages photos, photographies, médias sociaux, wikis, etc.). Nous étions ouverts à diverses disciplines en éducation et à une variété de méthodologies. Certaines questions nous semblaient particulièrement pertinentes : de quelle manière les technologies numériques influencent-elles la direction que prennent la recherche et la publication ? Comment modifient-elles notre notion de ce qui est important en recherche ? Qu'est-ce que les technologies numériques et le multimédia nous permettent de voir et entendre que nous ne pourrions pas voir ou entendre autrement ? Quelles sont les considérations éthiques entourant les questions de représentation et de voix, particulièrement en ce qui a trait à l'élaboration de subjectivités ? De quelle manière ces questions éthiques façonnent-elles la recherche et la représentation ?

Au cours du processus d'édition de ce numéro en tant que rédacteurs invités, nos esprits ont dérivé vers la publication phare d'Elliot Eisner, publiée pour la première fois en 1993 dans *Educational Researcher*, la revue vedette de l'*AERA*. Dans cet article intitulé « Forms of Understanding and the Future of Educational Research », Eisner soutient la présence de la recherche qualitative en éducation et particulièrement, des méthodes basées sur les arts. Les questions relatives à la représentation ayant façonné ce texte ont marqué un point

tournant dans le domaine de la recherche en éducation, croisement où nous nous trouvons de nouveau aujourd'hui, en raison de la grande affluence du multimédia. Pour Eisner, la représentation constitue une forme publique de conscience ou d'intention. Celle-ci donne vie aux pensées, de telle manière que les représentations peuvent être « stabilisées, inspectées, révisées et partagées avec d'autres » (p. 6). Eisner considère les ordinateurs comme le nouvel horizon de la représentation, soulignant que ceux-ci nous permettront de diffuser des « messages qui pourraient sinon nous échapper » (p. 6), particulièrement grâce à leur capacité à représenter la matière de manière synchrone (p. ex. visuellement). Il avance que l'approche « monolithique » a peu de valeur en recherche (p. 8). Puisque les sens sont multiples, leur représentation doit l'être également (p. ex. peinture, sculpture, dessin, écriture, chanson, etc.). Il s'interroge, demandant « à quoi ressemble une gamme complètement nouvelle de formes pour représenter la recherche ? » (p. 10). De plus, comment ces formats divers de représentations (p. ex. : film, chanson, toile, roman, etc.) peuvent-ils être utilisés pour saisir, de manières variées, la compréhension des étudiants ?

Ce sont essentiellement le même type de questions qui sous-tendent cette édition spéciale et, clin d'œil à l'ouvrage d'Andrew Piper (2009), *Dreaming in Books*, nous, chercheurs universitaires, commençons également à rêver en et grâce au multimédia. À l'instar d'Eisner, Piper plaide contre la voie unique pour communiquer les connaissances académiques et soutient que le numérique ne doit pas remplacer le livre, devenant à son tour la nouvelle unique voie à suivre. En fait, tel que le suggère Piper, nous sommes à notre époque et en un lieu où diverses possibilités existent, où divers « média créent eux-mêmes des lieux d'expérimentation et des rencontres très différentes » (p. 240). Les articles présentés au sein de cette édition explorent ces possibilités. Grâce à celles-ci, les responsabilités actuelles en éducation — p. ex. les pratiques d'enseignement, les stages, les partenariats avec la communauté, les programmes, les méthodes de recherche et leur communication — trouvent de nouvelles manières de s'exprimer en et par les possibilités qu'offrent les outils multimédia et les représentations discutés et présentés dans et par les articles universitaires traditionnels.

Nous sommes ravis de vous présenter neuf « articles », deux notes du terrain et un forum *RSÉM*. Nous présentons le mot « article » encadré de guillemets puisque notre première « publication » est en fait une baladodiffusion. En effet, Ted Riecken y présente ses réactions à notre appel pour soumission d'articles. Riecken, professeur à la faculté d'éducation de l'*University of Victoria* en Colombie-Britannique et ancien doyen de la faculté, a travaillé abondamment sur des projets de recherche impliquant les jeunes, les problématiques sociales et les nouveaux médias. Il a aussi exploré, de manière informelle, la baladodiffusion. La balado soumise à la *RSÉM* a présenté un fascinant problème au niveau de la révision par les pairs puisque l'auteur y était entendu plutôt que lu. La qualité de la voix et les mots prononcés étaient indissociables. Deux versions

ont donc été produites : une dans laquelle l'auteur / lecteur s'identifiait et une autre dans laquelle il ne révélait pas son identité (bien que la voix puisse permette d'identifier l'auteur). Or, la version reçue pour la révision par les pairs était malencontreusement la non-anonyme. Ceci a donné l'occasion aux réviseurs de répondre directement à l'auteur / chercheur / baladodiffuseur. Ils se sont donc rencontrés tous les trois pour discuter des enjeux fondamentaux de cette édition spéciale. Par conséquent, il nous fait plaisir de vous offrir à la fois la baladodiffusion et le forum *RSÉM*, où Ted Riecken, Anthony Paré (spécialiste en rhétorique académique et ancien rédacteur de la *RSÉM*) et Carl Leggo (chercheur en éducation accompli, poète et artiste) discutent avec enthousiasme des questions du multimédia en recherche ou comme moyen de recherche, incluant les implications en termes de révision par les pairs, de titularisation et de promotion.[1]

Voici maintenant une brève présentation de chacun des autres articles.

Soulignant la facilité avec laquelle certains chercheurs utilisent la vidéo numérique pour leur projet de recherche et leur enseignement, Bangou aborde les possibilités de ces technologies, en s'appuyant sur le concept d'agencement de Deleuze et par une rhizo-analyse de deux vignettes portant sur les recherches et la vie de l'auteur. Ces obligations théoriques et méthodologiques rendent possible la « pensée par le milieu de » en opposition à la « pensée à propos de » la recherche. La vidéo numérique n'est plus un simple outil pratique d'utilisation mais un agent fondamental à l'agencement de la recherche, influençant les et influencé par les chercheurs et les participants. Ainsi, la méthode classique de la théorie interprétative en recherche et analyse perd de son influence, créant de nouvelles possibilités de création.

Dans leur article, Petrarca et Hughes aborde la multi-modalité et le milieu universitaire par une exploration de la réalisation de films documentaires comme méthode de recherche. Ils analysent les éléments définissant la production de films documentaires comme travail académique à la lumière de la philosophie « publication à tout prix », en vertu de laquelle l'article publié sur papier représente le *nec plus ultra* en termes de communication universitaire. Se questionnant sur la crédibilité de la production de films documentaires comme réalisation académique, ils explorent, entre autres, l'obligation envers le médium, l'intégrité méthodologique, le processus créatif en recherche et la subjectivité / réflectivité du chercheur. Les auteurs en concluent que la réalisation de films documentaires a contribué à améliorer leur travail de recherche de façon notoire, particulièrement en ce qui a trait à l'interprétation des données et l'intérêt suscité au sein d'auditoires hors du milieu universitaire.

Smith, Ng-A-Fook et Corrigan cherchent à comprendre l'utilisation et les implications de l'apprentissage mobile (*m-learning*) dans le domaine de la littératie historique. Ils s'intéressent particulièrement aux contre-récits ainsi qu'aux pans de l'histoire sous-représentés ou oubliés, comme l'histoire et

l'héritage des pensionnats amérindiens au Canada. Suite au développement et au déploiement récent d'une application, *RNMobile*, les auteurs explorent les liens existant entre les technologies qui envahissent notre quotidien — les technologies mobiles — et le potentiel à les exploiter pour générer une conscience historique plus critique, ce à quoi les auteurs réfèrent comme « les techno politiques de la décolonisation ». Comme le soutiennent les auteurs, ces technologies favorisent également des occasions d'apprentissage plus personnalisées, flexibles et authentiques.

Schwab-Cartas et Mitchell s'attardent aux points communs existant entre les technologies cellulaires (films réalisés avec un téléphone cellulaire) et les caméscopes, en ce qui a trait aux possibilités pour les communautés rurales autochtones du Mexique et d'Afrique du Sud de produire une représentation autonome. Utilisant une approche plurivoque et une discussion sous forme narrative, les auteurs partagent des anecdotes de production, l'utilisation et l'accueil réservé aux films créés par des membres des communautés avec lesquelles ils collaborent. Également, ils réfléchissent à l'impact qu'ont ces technologies au sein des communautés en termes de production et transfert du savoir, ainsi qu'à l'influence que ces communautés peuvent avoir sur d'autres communautés autochtones et le reste du monde.

Grushka, Bellette et Holbrook relèvent le défi de soutenir la formation multimédia de manière critique et réfléchie, en tant que réalisation académique et méthode pédagogique, par le biais d'un éventail d'outils multimédia. Ils s'appuient sur l'enquête photographique participative pour explorer la réflexion critique effectuée pendant le tournage et l'utilisation des images numériques. Leur méthode consiste en trois étapes. La première implique l'utilisation d'une caméra Go Pro sur la tête d'une personne qui capte l'image initiale. Puis, une deuxième étape fait usage de la technologie de capture d'écran vidéo pour effectuer une réflexion sur cette image lorsqu'elle est sélectionnée et montée. Finalement, la troisième étape jumelle la réflexion dans un journal numérique et un échange collaboratif entre le formateur et l'étudiant. À la fin du processus, l'étudiant et le formateur peuvent utiliser l'enregistrement numérique de la création de l'image pour examiner les choix faits au cours du processus de production et ainsi, réfléchir sur leurs apprentissages. Les auteurs suggèrent que cette méthode Go-Pro a potentiellement des implications importantes autant pour la pratique enseignante que pour la méthodologie de recherche.

Dans le domaine de la formation des enseignants, Radford et Aitken partent en quête des façons dont les représentations multimodales des futurs enseignants permettent à ceux qui les forment de s'attaquer à la question suivante : « Que doit être notre réponse face aux moments difficiles vécus par les futurs enseignants en cours de stage ? » Utilisant des récits numériques s'appuyant sur l'implication des futurs maîtres lors de moments critiques vécus durant un stage, les auteurs conceptualisent les exigences psychologiques et sociales

de ces expériences. Ils avancent que ces moments difficiles sont souvent reliés à ce qu'il y a de douloureux, d'interdit ou de non-dit à négocier avec des problématiques pénibles. S'attardant à l'aspect mélodramatique de ces récits numériques, Radford et Aiken soutiennent que les outils technologiques peuvent donner aux futurs enseignants la possibilité d'exprimer leurs peurs et anxiétés. Ils peuvent également fournir à ceux responsables de leur formation des opportunités d'échanges constructifs pour aborder des émotions puissantes mais souvent négligées ou ignorées, à l'aide d'un médium qui facilite une exploration novatrice des problèmes.

Alors que l'utilisation des productions médiatiques devient de plus en plus en vogue dans l'enseignement et l'apprentissage et ce, particulièrement au primaire et au secondaire ainsi qu'en formation des maîtres, Yang formule une interrogation importante : « Qu'est-ce que les élèves apprennent vraiment ? » Yang explore cette question en l'inscrivant dans le contexte de la formation des enseignants et en réfléchissant sur l'utilisation de la production de vidéos comme moyen de stimuler la recherche engagée auprès de la communauté chez les nouveaux enseignants. Utilisant l'étude de cas et son expérience en production vidéo dans un contexte d'apprentissage au sein d'une communauté, elle évalue si la production vidéo encourage ce qu'elle appelle la recherche engagée. Elle conclut que lorsque les étudiants sont activement impliqués dans la création d'une vidéo originale plutôt qu'uniquement emprunter de l'offre médiatique existante, la différence dans les apprentissages est impressionnante.

Enseignants, professeurs formant des futurs enseignants et chercheurs impliqués actuellement et dans le passé dans des projets de mémoire au Canada et en Afrique du Sud, Strong-Wilson, Mitchell, Morrison, Radford et Pithouse-Morgan examinent les finalités et implications d'un tel travail de mémoire pour le numérique. Se basant sur le cadre conceptuel développé par Michael Rothberg sur la mémoire multidirectionnelle, les auteurs explorent de quelle façon ce concept permet, par son utilisation de la juxtaposition, d'établir des relations et des liens entre ce qui semblent à première vue des souvenirs personnels et collectifs disparates, particulièrement ceux impliquant un traumatisme et de l'injustice. Ils soulèvent aussi des questions connexes à propos de la production et la dissémination d'un tel travail de mémoire, produit sous format numérique. Les auteurs s'inspirent de ces questions pour réfléchir à l'avenir des défis présentés pour et par ces projets de recherche, chez les enseignants et ceux qui les forment.

Nous vous offrons aussi deux notes du terrain. Tout d'abord, Neupane partage son projet inspirant qui consiste à utiliser des outils numériques au sein des communautés rurales népalaises pour appuyer l'enseignement et l'apprentissage des sciences. Innovateur, son projet implique l'utilisation spontanée d'outils technologiques de pointe pour créer une bibliothèque numérique pour les élèves et les enseignants. Ces plates-formes électroniques exploitent des logiciels

peu dispendieux (p. ex. : *Raspberry Pi*) et des ressources disponibles en ligne et à source ouverte (p. ex. : vidéos, animations, baladodiffusions, images et Wikipédia) pour augmenter l'exposition aux idées et matériel scientifiques. Neupane souligne que « la mise en place d'une bibliothèque numérique à Jhimpa a permis à des étudiants d'avoir accès pour la première fois à une bibliothèque et à des sources de connaissances ». Ces bibliothèques — alimentées par une mini-centrale hydroélectrique locale — ont généré un enthousiasme notable au sein de la communauté enseignante et étudiante ainsi qu'auprès des administrateurs et des enseignants de communautés voisines. En effet, elles sont un exemple d'une utilisation productive du multimédia pour alimenter la curiosité et les connaissances scientifiques parmi les jeunes. Il nous tarde de lire les contributions futures traitant du potentiel transformationnel du multimédia en ce qui a trait à la recherche et aux pratiques en formation des maîtres dans ces communautés ou des milieux similaires.

Dans le cadre de leur travail auprès de communautés dont les membres ont vécu des traumatismes ou vivent avec cet héritage douloureux, Deutsch, Woolner et Byington effectuent une réflexion sur l'utilisation des récits numériques. Les auteurs ont animé et / ou participé à un projet réalisé au Foyer pour femmes autochtones de Montréal. Au sein de ce projet, les femmes, dont plusieurs ont vécu dans les rues de Montréal, ont reçu un appareil photo numérique et un soutien technique / artistique pour saisir leur vision de la ville — les gens, la géographie, l'architecture, etc. Les auteurs analysent les photographies et récits des participants, mettant en lumière la manière dont le point de vue esthétique du récit numérique a encouragé les participants à raconter de nouveau des situations habituellement difficiles à partager.

En guise de conclusion, il importe de souligner le fait que cette édition spéciale marque un tournant, une étape décisive dans la transformation de la *RSÉM* en revue disponible en ligne et à tous. Nous nous sommes questionnés concrètement sur ce qu'être une revue numérique implique pour nous, incluant les questions techniques de base. Certaines questions ont alimenté notre réflexion. De quelle façon le format numérique modifie-t-il ce que nous sommes comme publication universitaire ? Ce format offre-t-il de nouvelles possibilités et si oui, lesquelles ? Par exemple, une plate-forme numérique entraînera-t-elle la « publication améliorée » ou l'intégration d'Internet aux publications académiques (Jankowski et Jones, 2013, p. 349) ? Dans un autre ordre d'idées, quelles attentes, nouvelles ou anciennes, auront nos lecteurs / évaluateurs / utilisateurs ? Quels critères de sélection ou filtres utiliseront-ils pour décider ce qu'ils liront / téléchargeront et avec quoi ils interagiront ? Comment donneront-ils un sens à ce qu'ils lisent ? (Das et Pavličková, 2014, p. 394) ? Comment les publications multimédia transforment-ils la manière dont les gens répondent ?

Ce type de questionnements est le lot de plusieurs publications et tel que souligné par John Willinsky (2006), les revues universitaires (bien plus que les livres) sont des chefs de file dans la migration de la recherche vers le numérique, principalement en raison du mouvement de libre d'accès. Ce mouvement rappelle à tous que le savoir universitaire est subventionné par les deniers publics — par les bourses de recherche, le salaire des professeurs ou les bourses / prix offerts aux gradués — et par conséquent, doit être accessible par le plus large public possible. Internet et les changements qu'il a provoqués à la structure des universités, bibliothèques et autres institutions ont contribué à stimuler cette transformation. Que signifie donc être numérique et libre d'accès ? De quelle manière ces deux attributs ont-ils une influence sur la représentation académique ? Aussi, comme se questionne Eisner en conclusion de son article, faisant écho à la question que les éducateurs se posent perpétuellement : Quelle différence cela fait-il ? Comment cette discussion sur le multimédia et la représentation affectent-elles dans leur ensemble les étudiants et les enseignants, le fonctionnement en classe (à l'université, en cours de formation des enseignants, à l'école), les lieux formels et informels d'apprentissage et les formateurs. Votre opinion nous intéresse, qu'elle soit soumise directement à notre équipe (mje.education@mcgill.ca) ou sous forme de soumission d'article, de note ou de forum, en anglais ou en français. Le ciel (l'océan) est l'unique limite !

TERESA STRONG-WILSON, ANILA ASGHAR et AMAROU YODER
Université McGill

NOTES

1. Afin de le rendre disponible à un plus grand nombre de nos lecteurs, le forum *RSÉM* est offert sous la meilleure manière de le présenter, une transcription écrite. La baladodiffusion de Ted Riecken est également disponible sous format écrit, sur demande. (mje.education@mcgill.ca).

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MAPPING THE FIT BETWEEN RESEARCH AND MULTIMEDIA: A PODCAST EXPLORATION OF THE PLACE OF MULTIMEDIA WITHIN / AS SCHOLARSHIP

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ABSTRACT. Using the medium of the podcast this piece highlights key factors that may have an impact on how multimedia is used by educational researchers. The author examines the degree of congruence between the prevailing norms of representation in educational research and the norms and processes of multimedia as a way of presenting knowledge and information. The podcast also explores the extent to which multimedia is a usable resource in schools, and whether the skill sets and inquiry processes of educational researchers are compatible with the rip / burn / remix manifestos of multimedia and maker cultures. The author / podcaster concludes that changes in the adoption and use of multimedia within / as scholarship will evolve over time as more and more individuals learn how to produce multimedia content, while at the same time, consumers of educational research are becoming acclimatized to increased diversity in forms of knowledge representation.

DÉFINIR LES LIENS ENTRE LA RECHERCHE ET LE MULTIMÉDIA : UNE EXPLORATION EN BALADO DE LA PLACE DU MULTIMÉDIA EN / COMME MÉTHODE DE RECHERCHE

RÉSUMÉ. À l'aide d'une baladodiffusion, cet article illustre les éléments clés pouvant influencer la manière dont le multimédia est utilisé par les chercheurs. L'auteur étudie le niveau d'adéquation entre les normes de représentation actuellement en vigueur dans le domaine de la recherche en éducation et les normes et processus du multimédia en tant que façon de présenter le savoir et les informations. Cette baladiffusion explore dans quelle mesure le multimédia se révèle une ressource utile dans les écoles. Elle examine également si les compétences et processus de recherche en éducation sont compatibles avec les tendances riper / graver / remixer propres aux manifestes des cultures multimédia et maker (« fais-le toi-même »). L'auteur / baladodiffuseur en conclut que les changements dans l'adoption et l'utilisation du multimédia en / comme outil de recherche évoluera au fil du temps puisqu'un nombre grandissant d'individus apprennent à produire du contenu multimédia. De la même manière, les consommateurs de recherche en éducation s'habituent à une diversité accrue dans les manières dont le savoir est représenté.

NOTES

The podcast can be accessed by following this link: http://mje.mcgill.ca/article/view/9061/6999. The audio file is designed for use with headphones or earbuds. The following list of notes refers to supplementary material that the podcaster mentions in the audio file. A round-table was convened to discuss this scholarly podcast. The transcript of that discussion appears in this issue of the *McGill Journal of Education* and can be found at the following link: http://mje.mcgill.ca/article/view/9242.

1. Apple Garageband – For more information about Garageband as an audio production tool see http://www.apple.com/ca/ilife/garageband/what-is.html
2. Derek K. Miller – Penmachine Podcast and Blog. For more information on Derek K Miller's work and legacy see http://www.penmachine.com/ and http://www.cbc.ca/spark/2011/05/derek-k-miller/
3. George Dyson – Turing's Cathedral. A description of George Dyson and his work on the history of digital technology can be found at http://en.wikipedia.org/wiki/George_Dyson_%28science_historian%29
4. Henry Jenkins – On Participatory Culture. The following links highlight the work and ideas of Henry Jenkins: http://henryjenkins.org/; http://www.youtube.com/watch?v=1gPm-c1wRsQ; http://en.wikipedia.org/wiki/Henry_Jenkins
5. Maker culture. Links describing Maker culture and articles about 3D printing in Make Magazine can be found at: http://en.wikipedia.org/wiki/Maker_culture; http://makezine.com/category/workshop/3d-printing-workshop/
6. Maker lab in the Humanities at UVic. The website for the Maker Lab at the University of Victoria highlights the applications of this perspective http://maker.uvic.ca
7. Remix culture is defined in the following article in Wikipedia http://en.wikipedia.org/wiki/Remix_culture
8. Sam Altman's article "What happened to innovation?" is available at his blog, http://blog.samaltman.com/what-happened-to-innovation-1. An article describing Altman's background and role within the technology industry is available at http://en.wikipedia.org/wiki/Sam_Altman
9. A profile for media educator and researcher S. Craig Watkins is available at http://en.wikipedia.org/wiki/S._Craig_Watkins
10. A clip published by the Silicon Valley Historical Association showing Steve Jobs speaking on the topic of incrementalism and technology development can be seen at http://www.youtube.com/watch?v=zut2NLMVL_k
11. Vsauce - How much does the internet weigh? Micheal Stevens publishes his ideas on science, philosophy and technology on the YouTube channel VSauce. The following links describe his work and link to his YouTube Episode on how much the internet weighs: http://en.wikipedia.org/wiki/Vsauce; http://www.youtube.com/watch?v=WaUzu-iksi8

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ON THE COMPLEXITY OF DIGITAL VIDEO CAMERAS IN / AS RESEARCH: PERSPECTIVES AND AGENCEMENTS

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ABSTRACT. The goal of this article is to consider the potential for digital video cameras to produce as part of a research agencement. Our reflection will be guided by the current literature on the use of video recordings in research, as well as by the rhizoanalysis of two vignettes. The first of these vignettes is associated with a short video clip shot by a newcomer student as part of a three-year research project that focused on the interrelationships between citizenship, technology, and pop culture. The second vignette relates to the entry of a piece of art into the research agencement. As an agencement in and of itself, the goal of this article is not to provide definitive responses, but rather to disrupt habitual ways of thinking about videos in / as research and potentially contribute to change.

LA COMPLEXITÉ DES CAMERAS VIDEO NUMERIQUES DANS LA / EN TANT QUE RECHERCHE : PERSPECTIVES ET AGENCEMENTS

RÉSUMÉ. Le but de cet article est d'examiner ce que des caméras vidéo pourraient produire au sein d'un agencement de recherche. Notre réflexion prendra appui d'une part sur ce que nous révèlent les écrits consacrés à l'utilisation de films vidéos dans la recherche, et d'autre part sur la rhizoanalyse de deux vignettes. La première vignette est associée à un court clip vidéo filmé par un élève nouvel arrivant dans le cadre d'un projet de recherche de trois ans consacré aux liens qui unissent la citoyenneté, la technologie et la culture pop. La deuxième vignette touche à l'entrée d'une œuvre d'art dans l'agencement de recherche. Étant lui-même un agencement, cet article ne prétend pas fournir de réponses définitives, mais tend plutôt à perturber la façon dont nous envisageons les vidéos dans la / en tant que recherche et ce faisant à potentiellement contribuer au changement.

Video cameras have become a ubiquitous part of our everyday lives, and as such have contributed to the radical transformations of some of our social practices. Research in education has also been affected by such change, as an increasing number of scholars are now using video cameras as resources to study the processes of teaching and learning (Jewitt, 2012; Shrum, Duque & Brown, 2005). The ever-increasing affordability, performance, and handling

qualities of video cameras may have contributed to their popularity among researchers (Jewitt, 2012). It is also true that in the 1990s, a growing number of researchers became increasingly interested in the study of teaching and learning in socio-cultural contexts (Arievitch & Haenen, 2005; DuFon, 2002; Johnson, 2006; Kozulin, Gindis & Ageyev, 2003). By allowing researchers to capture learning and teaching in a natural setting and with great detail, video cameras have thus become a preferred data collection tool for a number of academics (Jewitt, 2012).

Using the concept of agencement (Deleuze & Guattari, 1987; see also DeLanda, 2006), this article will illustrate how digital video cameras have the potential to contribute to increased engagement with the "opaque complexities of lives and things" (MacLure, 2010, p. 4). More precisely, the goal of this article is to think *in* the research (instead of just thinking *about* it), and to reconsider the interrelationship between the video camera and other components of research agencements as a way of breaking free of our long-held paradigms (Lather, 1997; MacLure, 2010). We can then ask the question, within research agencements, how do digital video cameras function, and what do they produce?

This article will start with a brief presentation of Deleuze and Guattari's (1987) ontology and the concept of agencement, followed by an explanation of what conducting research as agencement entails. The reflections will be guided by the current literature on the use of video recordings in research, as well as by the rhizoanalysis of two vignettes. The first of these vignettes is associated with a short video clip shot by a newcomer student as part of a three-year research project on the interrelationships between citizenship, technology, and pop culture. The second vignette relates to the entry of a piece of art into research agencement. As an agencement in and of itself, the goal of this article is not to provide definitive responses, but rather to disrupt habitual ways of thinking about videos in / as research and potentially contribute to change.

A BRIEF INTRODUCTION TO DELEUZE AND GUATTARI'S ONTOLOGY AND THE CONCEPT OF AGENCEMENT

Contrary to classical philosophers like Aristotle and Plato, Deleuze did not advocate for a transcendent ideal; rather, he argued on behalf of the immanent nature of existence (Weinbaum, 2011). Indeed, the philosophy of immanence that Deleuze advanced is one that addresses both the origins of existence on a fundamental level as well as the emergence of beings as constituted individuals (Srnicek, 2007). In Deleuze's view, existence is primarily productive, and as such it "cannot be considered apart or separate from its myriad expressions," which themselves are entangled and immersed in the constant process of becoming (Weinbaum, 2011, p. 8). In this context, becoming refers to the merging of the world's various elements that form "multiplicities," which can be understood as expressions of existence (Weinbaum, 2011). Such a viewpoint negates the

importance of the identification and representation of the world's individual elements, and instead highlights the significance of interrelationships and how these interconnections help to form complex expressions of existence (Deleuze & Guattari, 1987; Sandvik, 2010; Weinbaum, 2011).

A Deleuzian philosophy of immanence, sees no hierarchical relationship between human and non-human elements of the physical world Rather, all expressions of existence are considered to be on the same level, as

> immanent philosophy acknowledges matters biological (as in respiration), emotional (as in the potential of a beautiful sunset to pass into the human body as sentimental mood), ethical (as in the demands passing into the owner when a kitten's eyes beg for food), and physical (as in the pain that makes the body move when sitting in an uncomfortable chair) as interventions between human and non-human elements. (Sandvik, 2010, p. 30)

For Deleuze and Guattari (1987), there are three dimensions to existence, namely: the actual, the virtual, and the intensive. The actual dimension deals with reality as it is observed, and is made up of individuations (i.e., fully constituted expressions of substance, or actualizations). The virtual dimension refers to the space of becoming, which appears not unlike the actual but encompasses patterns of becoming (Weinbaum, 2011). The intensive dimension, which intermediates between the actual and virtual dimensions, encompasses the production of actualizations as guided by virtual patterns (Weinbaum, 2011). All three dimensions are in constant interaction. For example, a black suit jacket in the virtual dimension could interact with elements such as a graduation ceremony, a funeral service, pride, or sorrow in the intensive dimension, and then materialize as a smile or a sob in the actual dimension.

According to this understanding, agencement is a concept that denotes "the inherent capacity of multiplicities to affect and be affected by each other" (Weinbaum, 2011, p. 22). Although the concept of agencement is often translated as "assemblage" in English, this article will retain the original French because the notion of "assembly" fails to capture the changeable nature and constant reinvention of an agencement. After all, the assembly of something like a children's swing set involves following unchangeable and linear instructions, since each component has been fabricated in accordance with a predetermined final product. If the assembly does not proceed as instructed, the final product will not be the swing set as intended. On the contrary, an agencement refers to an unregulated combination of various elements that, although not necessarily intended to be joined, nevertheless constitute a whole once combined (Bangou, 2013).

By nature, an agencement is changeable and non-linear, with a certain degree of inherent temporality (Bangou, 2013). Indeed, agencements are "functional conglomerations of not unified elements or self-identical entities or objects" (Sandvik, 2010, p. 31). Agencements are also affected by their own components,

including the flows, forces, and intensities that relate to their constitutive elements. Deleuze and Guattari (1987) further conceptualized an agencement as comprising two axes. The first of these axes has two parts: content and expression. As such, it is simultaneously a tangle of entities whose circumstances, passions, and motivations (i.e., content) react to each other, while actions, statements, and transformations (i.e., expression) are simultaneously and collectively enunciated. The second axis "has both territorial sides, or reterritorialized sides, which stabilize it, and cutting edges of deterritorialization, which carry it away" (Deleuze & Guattari, 1987, p. 88).

In order to illustrate the interconnectivity that occurs within and between agencements, Deleuze and Guattari (1987) have referred to the naturally occurring rhizome, which in botany is a subterranean plant stem that sends out independent roots and shoots in all directions. They further noted that the idea holds true for some animals in instinctive pack formation, for "any point of a rhizome can be connected to anything other, and must be" (Deleuze & Guattari, 1987, p. 7). Indeed, like rhizomes, agencements freely and constantly establish connections and interconnections between themselves that are neither fixed nor inflexible (Deleuze & Guattari, 1987). Also like rhizomes, agencements may be broken or shattered at a particular connection, but they will re-establish themselves on either an old or a new line — like a map as opposed to a tracing (Deleuze & Guattari, 1987). Indeed, "what distinguishes the map from the tracing is that it is entirely oriented toward an experimentation in contact with the real. The map does not reproduce an unconscious closed in upon itself; it constructs the unconscious" (Deleuze & Guattari, 1987, p. 12). Like a map, this article attempts to construct the unconscious by exploring the role that video cameras can sometimes play in a research agencement.

The analogous concept of assemblage has more recently been re-examined by a number of scholars, including DeLanda (2006). In order to "elucidate the proper ontological status of the entities that are evoked by sociologists and other social scientists" (p. 8), DeLanda has added a third axis. This additional axis defines how expression consolidates an agencement and enables "a certain latitude for more flexible operation while benefiting from genetic or linguistic resources (processes of coding and decoding)" (DeLanda, 2006, p. 19). Thus, in the actual dimension, although a fixed number of properties may characterize the elements of an agencement, an infinite number of capacities to affect — and be affected by — interactions with other elements may be present, with this set of potential interactions varying from element to element (DeLanda, 2006).

Massumi (1996, 2002, 2010), also seeking to better understand the changeable and non-linear nature of existence, focused on how multiplicities affect each other — especially in terms of the connection between one's mind, body, and affect. In a seminal article, he pointed to a study demonstrating that sad images are not always related to unpleasantness in order to show that the relationship

between an element's qualities (i.e., content) and intensity (i.e., strength and duration of effect) is neither straightforward nor logical, but in fact multi-leveled in terms of intensity and qualification (Massumi, 1996). For him, levels of intensity and qualification are not connected through a relationship "of conformity or correspondence, but [rather] of resonation or interference, amplification or dampening" (Massumi, 1996, p.219). Indeed, in his view, elements that generally tend to be semantically or semiotically indexed as being separate (e.g., pleasure and sorrow) can potentially be connected through their intensity (Massumi, 1996). Massumi (1996) has also equated intensity with affect, and has conceptualized intensity as a state of emotional suspense where disruption could potentially occur (e.g., through pleasure or sorrow).

Notably, Massumi (1996) cautioned against viewing affect as being synonymous with emotion, as affect pertains to intensity and abides by its own logic, while emotion relates to "the conventional, consensual point of insertion of intensity into semantically and semiotically formed progressions, into narrativizable action-reaction circuits, into function and meaning" (p. 221). Moreover, for Massumi, both intensity and qualification are instantaneously embodied within one's existence. Specifically, intensity is embodied "at the surface of the body, at its interface with things," whereas qualification is embodied at a deeper level, mostly because it is "associated with expectation, which depends on consciously positioning [it]" (Massumi, 1996, p. 219). However, both intensity and qualification still involve independent reactions (e.g., goose bumps, which are simultaneously embodied both on a surface level and on a deeper level). As he explained,

> modulations of heartbeat and breathing mark a reflux consciousness into the autonomic depths, coterminous with a rise of the autonomic into consciousness. They are a conscious-autonomic mix, a measure of their participation in one another. Intensity is beside that loop, a nonconscious, never-to-be-conscious autonomic remainder. It is outside expectation and adaptation, as disconnected from meaningful sequencing, from narration, as it is from vital function. (p. 219)

Following Deleuze and Guattari (1987), scholars have built upon the philosophy of becoming and have determined that agencement are constantly affecting — and being affected by — other agencement via rhizomic connections. Thus, an agencement has multiple entry points, all of which are located within the veritable tangle of interconnections.

CONDUCTING RESEARCH AS AGENCEMENT

Recently, MacLure (2010) argued that in order to conduct research within a theory such as the one described above, and to "work the ruins" (i.e., escape the gazes of more traditional, familiar, and comfortable paradigms) while doing so, one needs to engage "with the opaque complexity of lives and things" (p. 4).

This engagement, she argued, can only be accomplished through Deleuze's transcendental empiricism — that is, through an empiricism that provides the space to be aware of, and engrossed with

> the sensations, forces, and movements beneath the skin in matter, in cells and in the guts as well as between individuals and groups. This kind of empiricism traces intensities of affects that move and connect bodies subatomatically, biologically, physically and culturally. It doesn't privilege human interpretation or conscious perception and the bodies that are animated by affects are by no means restricted to human bodies. (MacLure, 2010, p. 5)

MacLure (2010) further argued that it is primordial to "find a language that interferes with its own tendency toward homogeneity, categorization, and equilibrium, so that it begins to vibrate, releasing variation and singularity" (p. 6), and then make the language stutter by interrupting its usual workings.

In the same vein, Haver (1997) has advocated for the advancement of queer research, as it would interrupt the world rather than provide a normalizing explanation of it. From this perspective, queer research could potentially "precipitate an onto-epistemological panic" in individuals and society by inducing "stammering," or the "essential inability to conceptualize what is being thought when thought tries to think its thinking" (Haver, 1997, p. 290).

In line with MacLure's (2010) notion of making language stutter, Sandvik (2010) has shared her experience as an educational researcher by using a method of agencement that includes both art and philosophy. For her, researchers play an integral role in research agencement, and hence they should relate *in* the material they gather in the field as opposed to just relating *to* it (Sandvik, 2010). Moreover, she advocated that "we have to move towards a decentring of the researcher as a subject and start engaging in the flows, intensities, and speed that emerge from different parts in the machineries in action (human and non-human)" (Sandvik, 2010, p. 32). Once this is achieved, any number of unanticipated elements might surface to enrich and guide the analysis.

This article is an attempt to think *in* the research project and to relate with the material collected via digital video cameras. In fact, this article in and of itself could be considered an agencement of multiple forces, flows, and intensities. One of them was the call for articles for this special issue on multimedia in / as research, which triggered my reflection. In order to explore what video cameras contribute to the agencement of the research, the ways they potentially affect and are affected by their connections with other elements of the agencement, as well as the agencements that were created through these relationships will need to be mapped out. This can be done by considering the actual characteristics of the video cameras used in the research project and the ways they affected and were affected by the research participants and the researcher — all while keeping in mind that physical, biological, emotional, political, and ethical matters could potentially intervene in these mechanisms.

Inspired by Lenz Taguchi (2009), Sandvik (2010) explored the speeds, intensities, and flows of research agencement by slowing down and speeding up the analysis in circular and horizontal movements. Circular movements focus on the re-examination (e.g., criticizing, deconstructing, rethinking) of the field material (Sandvik, 2010). Moreover they offer opportunities to challenge what is taken for granted, making the researcher active and conscious of his or her habitual ways of thinking. Such movements slow down the process of research analysis and leave open a space to think / live the events once more (Sandvik, 2010). On the contrary, horizontal movements accelerate the flow of events, and enable transformation and change in the emergence of a new event, which makes it easier to let go of habitual ways of doing (Sandvik, 2010).

Along these same lines, Masny (2013) introduced the concept of rhizoanalysis as a means to expose "potentialities for thinking differently about qualitative research" (p. 339). Rhizoanalysis is an approach that enables a researcher to analyze transgressive data (i.e., sensual data, emotional data, response data, and dream data), which is by definition "out-of-category and not usually accounted for in qualitative research methodology" (St. Pierre, as cited in Masny, 2013, p. 341). For Masny, rhizoanalysis is an agencement that first and foremost creates change; it is intended not for finding meaning (interpretation), but rather for creating wonder about what could potentially become. It follows that we, as researchers, must shift our focus from data to vignettes. Indeed, vignettes — which are integral to research agencement — allow research to "rupture, deterritorialize, and take off in unpredictable rhizomatic ways and create concepts" (p. 343). For this to happen, however, it is necessary to first "understand the process involved in the selection of vignettes and how they are written up, [and] how vignettes-becoming-map actualize" (p. 343).

For Masny (2013) and her multiple literacies theory, reading, reading the world, and self are all mechanisms that have the potential to transform both human and non-human life. To her, reading is both intense and immanent: "To read intensively is to read critically" so as to disrupt established patterns of thought, keeping in mind that "cognitive, social, cultural, and political forces are at work" (p. 15). Disruptive reading is a kind of immanent reading (i.e., thinking of, and investing in, reading) in that it is actualized in unpredictable ways based on the interconnections of a particular agencement.

Reading, reading the world, and self are all integral to rhizoanalysis. Indeed, the selected vignettes — essential components of any rhizoanalysis — can be intensely affective, as their passages often "disrupt as connections happen in the mind of the researcher and thought is produced" (Masny, 2013, p. 343). This reflexive characteristic is what makes rhizoanalysis unique, as it is "not a matter of going through the whole data set to identify excerpts according to themes or codings" (p. 343), but instead is a vehicle that creates opportunities for the researcher to pose new questions. This happens when "the analysis

'is reported' in indirect discourse," and as a result "the subject is decentered and so interpretation by the subject is abandoned. Concepts are created and introduced through questions and indirect questions for there is no one way to look at vignettes" (Masny, 2013, p. 343). This article is likewise intended to generate more questions than answers as new understandings are created.

USING VIDEO CAMERAS IN / AS RESEARCH

There is a plethora of studies on the use of video cameras in / as research (e.g., Penn-Edwards, 2012; Shrum et al., 2005), particularly in social sciences such as ethnography, anthropology, and education (DuFon, 2002; Jewitt, 2012). The use of the video camera as a research instrument has a long history in these fields, as it has enabled researchers to capture and examine complex social events (Jewitt, 2012). Interest in video recording has steadily increased as the technology has evolved, and researchers have found innovative ways to integrate it into their research (Jewitt, 2012). In the same vein, Shrum et al. (2005) note that today people are more willing to be filmed (or to film themselves), for video cameras are a ubiquitous part of our lives. The accumulated effect is that video cameras are now a research instrument of choice for social scientists.

Digital video cameras have the advantage of being more accessible, more mobile, and easier to manipulate than the video cameras of the analogue era. Therefore, in recent years they have been increasingly used to support different aspects of research projects, including the organization of the project, the collection and analysis of the data, and the dissemination of the results (Garcez, Duarte & Eisenberg, 2011; Shrum et al., 2005; Walker, 2002). Because of the pervasiveness of video cameras in today's research, many guides have been created for the use of video in research (Garcez et al., 2011). One of the most recent of these (i.e., Jewitt, 2012) provides guidelines on the many ways to integrate videos into research projects, and highlights some of the strengths and limitations of such uses; issues associated with the validity of such data are also addressed.

Many researchers have examined how the use of video cameras affects the research project, focusing for instance on the relationship between the researcher and the participants (Shrum et al., 2005); the gaze of the video camera (Jewitt, 2012); the manipulation and transformation of the data (Garcez et al., 2011); the perception of the researcher (Penn-Edwards, 2012); and the motivation of the research participants and confidentiality protocols (Schuck, & Keaney, 2006). In most of these studies, warnings and advice were formulated mainly to minimize "corruption" of the data and to preserve their accuracy (Schuck, & Keaney, 2006). Such stances are in part based on a transcendent view of existence; in other words, as researchers we observe "the world from a perspective outside its existence" (Weinbaum, 2011, p. 3), and only by extracting its essence can we acquire real knowledge about the world.

While it is important to engage in a reflection on the ways that video cameras can affect a research project, this article will attempt to do so from a different standpoint. It recognizes that existence is always partial and provisional (MacLure, 2010), and that transformation is constitutive to any research agencement. A video, therefore, is just a potential actualization of multiple virtual and intensive connections. What matters is not necessarily to extract the essence of (i.e., to define) a specific actualization, but rather to map the interrelated processes that lead to its emergence — which is what this article will attempt to do in regards to the ways that digital video functions and produces as part of the research agencement.

THE RESEARCH PROJECT

This article is based in part on field material that was collected as part of a three-year research project that was funded by Canada's Social Sciences and Humanities Research Council.[1] Numerous English and French high schools in Ontario, Canada participated in the original study, which aimed to understand how information and communication technologies (ICT) and pop culture intersected with immigration during the process of young people's "becoming-citizen." Specifically, the initial project used Masny's (2009) multiple literacies theory to look at how the dominant discourses of a normed society (e.g., school programs, policies, curriculums, etc.) were articulated, both at home and at school, in terms of their interconnectedness with the counter-discourses of citizenship. The original research team was made up of three University of Ottawa professors (including myself), each with varying degrees of experience with Deleuze's philosophy, Masny's multiple literacies theory, and rhizoanalysis; I myself had only just been initiated to Deleuze's work and was new to rhizoanalysis.[2]

The first vignette featured in this article is based on material taken from a French public high school in Ontario, Canada. At this school, seventeen students ranging from grade seven to grade ten participated in the original research project. All participants at this school spoke at least two languages. Some were born in Canada, and others were newcomers to the country within the past five years. All had parents from diverse countries of origin in Africa, Asia, the Middle East, and / or Latin America.

COLLECTION OF THE MATERIAL

The original research project collected research material in three phases, all of which focused on the responses of students (and sometimes teachers, parents, and administrators) to issues, discussions, and assignments related to citizenship. Most relevant to the present article is the third phase, which had student participants using video cameras to create their own video "texts" to serve as agencements of citizenship, pop culture, and technology. For this third phase,

participants were given easy-to-use digital video cameras (Flip cameras) about the size of a mobile phone. Participants took these Flip cameras home on two occasions, for a period of about three days each time, with instructions to take simple videos that would communicate what being a citizen meant to them. For guidance, we suggested making films about how they liked to spend their time, both online and in the real world. After they had returned the Flip cameras, each participant took part in a short individual interview to review some of their clips and discuss what they had filmed. The interviews were intended to map the various elements that contributed to the emergence of these films as agencements. At the end of the research project, all participants had created at least one film, with thirteen participants creating a second film as well. One of these films forms the basis of the first vignette featured in this article.

In order to think *in* the research agencement (instead of simply thinking *about* it), I kept a digital voice recorder (on a cell phone) by my side as I was working on this article as a way to capture whatever emotions and reflections might be triggered by this research agencement. This was particularly helpful when I was reviewing the student video texts, as some of the feelings I had experienced during the initial research project returned to me and I was able to make note of them with the recorder. I was also able to record some thoughts on the interconnection between the virtual, the actual, and film as they were triggered while I was visiting a modern art museum; those reflections comprise the second vignette featured in this article.

ANALYSIS OF THE MATERIAL

This article is based on a rhizoanalysis of the field material collected during the initial project (e.g., Vignette 1), and the material that emerged when writing this article (e.g., Vignette 2). The first vignette, which is based on a clip from one of the student videos, enables the analysis to be slowed down through circular movement, as it provides an opportunity for me to both re-think and re-live the moment as it is captured on film — making me conscious (and critical) of my habitual ways of thinking. The second vignette focuses on my experience in writing this article as a way to disrupt the flow of my research agencement through the emergence of an unexpected element: an art installation. The analysis is able to speed up through horizontal movement in order to enable me to once again let go of my habitual ways of thinking. In this way, it is my ultimate hope that the rhizoanalysis of these two vignettes will open new lines and enable our reflections on video cameras and research agencement to take flight.

In Vignette 1 (see below), a student named Abdu (pseudonym) and I talk about the Arabic music that can be heard in the background of one of his films (see Video 1). Abdu was a student in a grade eight citizenship course. He was born in Canada, and his parents were originally from Algeria. At the time of the research he spoke Arabic, French, and English. The interview which comprises Vignette 1 was conducted in French.

VIDEO 1. *Abdu's video clip* (click to activate)

Video 1 is part of a series of short video clips recorded with the Flip camera filming out the window while Abdu was travelling in a car. This particular clip lasted for about a minute, and the entire time the voice of his mother can be heard speaking in Arabic and French over the Arabic music that is playing on the radio. At one point, we can also hear the voice of his baby brother. At the end of the clip, Abdu says something to his mother in Arabic with some French words here and there. While Abdu submitted several video clips, the level of intensity (Massumi, 1996) that this one evoked in me was stronger than for the other video clips. In the following vignette, intense affective passages are underlined to show when connections happened in my mind and when thought was produced (Masny, 2013) as a way to map how this vignette was selected.

Abdu chose to film a passing neighbourhood through a car window as a way of capturing on film what being a citizen meant to him. In order to slow down the rhizoanalysis, this vignette can be reconsidered in terms of how the Flip camera functioned and produced within the research agencement. Specifically, a focus can be placed on how the Flip camera's characteristics affected and were affected by other elements in this research agencement. Slowing down the analysis in this way enables me to see how Abdu was not only able to use the Flip camera to actualize a unique citizenship-related experience as it occurred, but also able to share that experience with me. This is in line with DeLanda (2006), who asserts that an agencement has elements that "stabilize its identity as well as components forcing it to change or even transforming it into a different assemblage" (p. 12). In what other ways might various elements of the research agencement affect and be affected by the characteristics of a video camera?

Researcher: *Tu écoutes quoi le plus souvent ?*
Abdu: *Le raï.*
R: *Le raï plus souvent. Parce que tu aimes, ou... ?*
A: *Je l'aime.*
R: *Tu écoutes aussi de la musique dans d'autres langues à part l'arabe et le français? Surtout ça ?*
A: *Oui.*
R: *Et c'est ta mère qui te parlait là ?*
A: *Oui.*
R: *L'arabe est de quel pays ?*
A: *Algérie.*
R: *L'Algérie. J'ai aussi l'impression d'entendre un peu de français lorsqu'elle parle ta mère. C'est ta mère qui parle.*
A: *Elle mélange les deux.*
R: *Elle mélange les deux, d'accord. Alors pour toi c'est important de montrer cette langue et la musique ?*
A: *Oui.*
R: *Qu'est-ce que ça évoque pour toi ?*
A: *Ça me rend content.*
R: *Hmmm mmm.*
A: *La musique, des fois ça m'aide quand je suis stressé.*
R: *D'écouter de la musique en arabe ça te calme ?*
A: *Ça me soulage.*
R: *Ça te soulage. Qu'est-ce que tu veux dire ça te soulage ?*
A: *Comme je ne vais pas penser au problème.*
R: *Hmmm mmmm.*
A: *Je suis dans un autre monde.*
R: *Ah, ça te met dans un autre monde ?*
A: *Oui.*
R: *Et le monde que tu imagines, est un monde... ?*
A: *C'est un monde calme.*

Researcher: What do you listen to most often?
Abdu: Raï.
R: Raï most often. Because you like it, or...?
A: I like it.
R: Do you also listen to music in other languages besides Arabic and French? Mostly that?
A: Yes.
R: And it's your mother that was talking to you here?
A: Yes.
R: Arabic is from what country?
A: Algeria.
R: Algeria. I seem to be hearing a little bit of French when your mother speaks. Is it your mother who is speaking?
A: She mixes both.
R: She mixes both. Okay. So, it's important for you to show this language and the music?
A: Yes.
R: What does that evoke for you?
A: It makes me happy.
R: Hmmm mmm.
A: Music helps me sometimes when I'm stressed.
R: Listening to Arabic music calms you?
A: It's a relief to me.
R: It's a relief to you. What do you mean it's a relief to you?
A: Like I'm not going to think about the problem.
R: Hmmm mmmm.
A: I'm in another world.
R: Oh, it puts you in another world?
A: Yes.
R: And the world that you imagine is a world...?
A: It's a calm world.

VIGNETTE 1. *It's a calm world*

In slowing down the analysis, I may also ask how certain aspects of video camera technology can transform the notion of citizenship into another agencement. Dominant discourses often discuss citizenship in terms of space as state, borders, and territory, while Abdu's film (which inadvertently captured the sound of the radio) explored how citizenship becomes a calm world through music — an idea that was quite a departure from how citizenship was viewed even in his class. Indeed, in the curriculum that guided this course, citizen was mainly defined as the status of a person in relation to a state (Bangou & Fleming, 2014). Clearly, video technology enables the creation of multimodal "texts" that combine both visual and audio elements of the world, potentially disrupting more conventional (i.e., paper and ink) narratives by incorporating sights, sounds, and emotions (e.g., passing neighbourhoods, Raï, calmness)

that would otherwise be semantically indexed as separate. Through this simple and unplanned video, however, such connections are possible because an affective space is created. The small size and easy-to-use nature of the Flip camera enabled this space to be created. The connections that another device (i.e., an audio recorder) could have been produced in that exact moment can never be known, and we are left to wonder if the video's visual elements in particular affected the level of intensity within the research agencement. After all, the Flip camera served as more than just a "gaze" into Abdu's experience. Rather, it became a force in the production of citizenship-related connections, actualization, and agencement. This made me wonder how the agencement of Flip cameras, participants, and citizenship could all potentially be transformed by such connections.

Importantly, Abdu's vignette brings to the forefront of my mind how I, as researcher, also became a force in this agencement, as affective connections were made in my mind during the rhizoanalysis (see the underlined text in the above transcript). As previously mentioned, I had only recently become familiar with Deleuze's work, and the original research project marked my first time attempting rhizoanalysis. Letting go of my formal training as "interpreter" of data was not easy for me (and, to some extent, it is still not easy). For instance, the first time I conducted interviews with the sole purpose of mapping the emergence of ideas (as opposed to interpreting the material), I had little confidence that I was asking the right questions in the right way.

As I reviewed material for this present article, recollections of the frustration I felt while first watching the participants' video clips began to emerge — frustration that stemmed from my inability to identify logical and linear relationships between citizenship and the videos. As I re-watched Abdu's video, however, I remembered the relief I had felt when I first viewed it; at last I had a clear entry point (in this case, music) into a student's agencement of citizenship. Interestingly, I also remembered that what had first attracted me to this clip was the music, as it reminded me of music I had listened to in France many years before. Perhaps if the music hadn't been so intensely affective for me, I would not have been drawn to this clip — which leaves us to wonder what alternate understandings may have surfaced if other participants' videos had made similar affective connections for me in the intensive dimension. Indeed, the intensity of the video clips for me as researcher may have transformed not only the research agencement, but also the resulting notion of citizenship and how it is connected to pop culture and technology.

This vignette was an attempt to look back at research material while slowing down the speed of the analysis and thinking *in* the research agencement in regards to how the video camera functions and produces. Through this process, thoughts were generated through the disruptions that occurred in my head and the video cameras eventually became a force that led the research agencement

into a path. In the next vignette, smoother spaces for transformation will be created by speeding up the flow of analysis.

The following vignette is about an experience I had when I was writing this article. The thoughts transcribed below were recorded on August 24, 2013, on a cellular phone at a modern art museum. Although, in this case, a device other than a video camera was used to record the material, video cameras were intrinsic parts of this agencement as they were the object of the thoughts that were generated. Intense affective passages are underlined to show when connections happened in my mind.

VIGNETTE 2. *An afternoon at the museum*

> I just saw an exhibit of modern art that kind of activated some thoughts regarding the article I am writing right now about the use of video in research and some artists such as Manders, who created this piece that [is] just supposed to trigger some thoughts [in] us. So, it made me think about the video cameras and when we gave [them] to the students and how it kind of triggered some thoughts also for them. They really had to stage, putting in a visual or audio form, what they wanted to say about citizenship. So these are the kind of thoughts that [arose] when I was looking at this exhibit. So maybe I need to think about it some more while I'm writing.

The piece of art I am referring to was created by Mark Manders and Jarla Partilager and is called "Room with Reduced Chair and Camouflage Factory" (Figure 1). The main elements of this piece are a chair in a reduced format and an imagined camouflage factory, complete with three flattened shapes that resemble animals. When reading the short text about the piece, I understood that the misplaced and misshapen elements were put together not so much as representations of reality, but rather as activators of thought.

What happened when this piece entered the research agencement? As mentioned in the above vignette, it made me think about the agencement of the video cameras and the research, as well as the ways that both elements were affected by one another. As the analysis sped up through broad horizontal movement, thoughts emerged in regards to the ways that the student participants had to create "texts" about citizenship using video — a mode of expression not traditionally promoted in high school. Just like Manders and Partilager's piece, the students' films were not necessarily representations of reality, but rather, possible expressions of it. They were the agencements of misplaced and misshapen elements that are sometimes associated with citizenship, pop culture, and technology, and these agencements could potentially produce change through the thoughts they activated.

What could potentially happen when unconventional modes of expression are promoted in a classroom, particularly with regards to citizenship? According to MacLure (2010), we need to locate language that stutters in order to break out of old paradigms and "work the ruins," so to speak. Therefore, perhaps

it would be best for educators to provide learners with the space and opportunity (e.g., via video cameras) to create their own maps of citizenship, rather than ask them to simply reproduce and perform citizenship as it is defined in dominant discourses. By doing so, we might enable them to create real change.

FIGURE 1. *Room with Reduced Chair and Camouflage Factory (Manders and Partilager, 2010)*

In this research agencement, conversations between the student participants and the researchers were created through the video cameras. These conversations started when we entered the classroom and presented the project to the students. How might the "language" of our conversations have been affected by the video cameras? For instance, I remember the enthusiasm that some of them exhibited when we showed them the pocket-sized video cameras and told them that they could take them home. How may these emotions have contributed to the transformation of the video cameras within the research agencement?

This vignette illustrates what could potentially happen when an unexpected element such as a piece of art enters a research agencement. The video cameras and the research agencement became "other" through the thoughts that were generated as a result. However, it is also important to acknowledge that this piece of art could have generated any number of thoughts when it entered the research agencement.

OPENING

Conducting research is certainly a creative process that transforms and produces existence in complex ways. Deleuze and Guattari has provided us with the tools to conceptualize such complex mechanisms not so much to control or manage existence but rather to participate in its proliferation, through disruptions. This article was an attempt to do so, by thinking *in* a research agencement. More precisely, the question that guided our reflection was within research agencements, how do digital video cameras function, and what do they produce?

As parts of the research agencement the video cameras affected and were affected by other elements of the agencement and it is through these intensive / affective moments that disruption potentially occurred, and the research became other. Indeed, when researchers, participants, and their emotions and senses are all on the same level along with video cameras, each of these elements can potentially create change. For instance, Abdu was able to capture easily with a video camera a spontaneous and unpredictable experience and by doing so, transformed citizenship into an emotional world. The text created with the video camera generated feelings of relief into the researcher which directed the research into a path. The call for articles for this special issue on multimedia in / as research was another element of the agencement that contributed to the emergence of this article and to the transformation of video cameras into productive forces.

The goal was not so much to provide definitive responses, but rather to illustrate what could happen when, as researchers, we creatively engage with other elements of a research agencement and open ourselves up to the realm of possibilities. However, doing so was not an easy process, as it "has been hard to escape interpretive mastery and narrative coherence" (MacLure, 2010, p. 3) and detach from hierarchies and linear thinking. Using videos as a way to make the language of research stutter may be an interesting avenue to explore keeping in mind that they could also potentially shut down change through the frames and blind spots they produce. As Deleuze and Guattari (1987) and DeLanda (2006) argue, within an agencement there are elements that work to stabilise it and maintain the status quo and others that force its transformation. It may be why it is still so difficult to use multimedia in / as research even when we want to push boundaries. Now that I come to think of it, this creative process could have contributed to the emergence of a video as opposed to an article, but somehow it did not happen.

It is important to become aware of the connections that affect a complex system such as a research project. Yes, doing so could be "messy," as one is carried in multiple and unpredictable directions. In that regard, rhizoanalysis, as well as circular and horizontal movements of analysis, are helpful in mapping the processes of becoming. For the present research agencement, these processes of becoming have affected the video cameras, the researcher, the participants, the research agencement, and even this article, for they are all connected. As a reader, you are now part of this agencement, and anything can now happen.

NOTES

1. I would like to thank the Social Sciences and Humanities Research Council for their contribution to this research.

2. Please note that the data reported in the first vignette belongs to the SSHRC project / research team as a whole (including myself) whereas the data reported in the second vignette belongs to me as it emerged when I was writing this article.

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MOBILIZING KNOWLEDGE VIA DOCUMENTARY FILMMAKING — IS THE ACADEMY READY?

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ABSTRACT. The predominant form of research dissemination resides in the scholar's domain, namely academic conferences and peer-reviewed journals. This paper describes how two colleagues and researchers integrated documentary filmmaking with research methods in their respective scholarly work, supporting the case for documentary film as an alternative form of scholarly work and knowledge mobilization outside the walls of the university. The authors add to the ongoing conversation for a more dynamic use of digital video-recording that moves beyond simple data collection and encourage researchers to tap into multimodal forms of expression, specifically digital filmmaking.

MOBILISER LE SAVOIR PAR LA RÉALISATION DE FILMS DOCUMENTAIRES – LE MILIEU UNIVERSITAIRE EST-IL PRÊT?

RÉSUMÉ. La dissémination de la recherche passe principalement par des canaux universitaires, tels que des colloques universitaires ou des publications relues par des pairs. Cet article décrit la manière dont deux collègues et chercheurs ont intégré la réalisation de films documentaires à leurs méthodes de recherche universitaire. Ce faisant, elles confirment l'intérêt du film documentaire comme méthode alternative de recherche universitaire et de mobilisation du savoir à l'extérieur des murs de l'université. Les auteurs ajoutent ainsi leurs voix aux discussions actuelles préconisant une utilisation plus dynamique de l'enregistrement vidéo numérique, au-delà de la simple cueillette de données et encouragent les chercheurs à tirer avantage de ces autres formes d'expression, particulièrement la production numérique de films.

Two researchers, two purposes, two different research topics — one common question — might documentary filmmaking serve as an alternative form of "publication" within the academy? This article explores how documentary filmmaking might serve as an alternative form of legitimate scholarly work within the deeply embedded "publish-or-perish" culture of universities. We

examine this possibility by narrating how two colleagues arrived at this notion independently, and how a call for papers for this journal served as a catalyst for sharing how we merged our interests, and why we feel documentary filmmaking might serve as a powerful medium for research knowledge mobilization.

This paper first provides a selected overview of documentary filmmaking as it relates to other related film genres such as ethnographic and anthropologic film, and follows with an examination of the notion of visual research in the literature. Next, we describe how we integrated documentary filmmaking within our scholarly interests. Our joint findings suggest that documentary filmmaking might be a legitimate and alternative form of scholarly work.

A REVIEW OF THE LITERATURE

Academic research is typically written in a style and for venues that remain largely inaccessible by the general public and even by the practitioners who might benefit from it. Glesne (2010) suggested that to make our work accessible "to others beyond the academic community…means creating in forms that others will want to read, watch, or listen to, feel and learn from the representations" (p. 262), such as "drama, poetry, and narrative" (p. 245). Eisner (1997) added that alternative forms of data representation "make empathy possible when work on those forms are treated as works of art,", "provide a sense of particularity that abstractions cannot render," generate "insight," and invite "attention to complexity" (p. 8).

Weber (2008) also suggested that visual images serve as effective tools for researchers in a variety of contexts within the research process. Examples of how visual images could be incorporated into various phases of research include: the production of visual images by researchers or participants, the use of visual images (that already exist) as data or "springboards for theorizing" (Weber, 2008, p. 48), the use of visual images to produce other data, the use of visual images for feedback and documenting research processes, and the use of visual images to interpret or represent their work (Weber, 2008). We address several of these examples put forth by Weber, however, the key focus of this work is based on the latter example — the use of visual images to interpret or represent work via visual research which in this case takes the form of documentary filmmaking.

Theoretical, epistemological, and technical debates regarding documentary and ethnographic film is abundant in the literature (Nichols, 2010; Ruby, 2008), and lie beyond the scope of this paper; however, a brief distinction between these genres of film warrants attention since part of the distinction serves as an underlying reason why we deliberately chose documentary filmmaking as an alternative form of scholarly publication. Documentary filmmaking, a term coined by Grierson in the 1930s as a "creative treatment of actuality" (as cited in Nichols, 2010, p. 6), continues to be a genre and term debated

by documentary film theorists (Bergman, 2009). Neutral representation, the filmmaker's influence, the type and format of documentary, and the audience are examples of several areas of tension within the documentary film genre (Bergman, 2009).

We base our conceptual understanding of documentary film on the propositions put forth by Nichols (2010). Grounded loosely in Grierson's original definition of "creative treatment of actuality," Nichols suggested that documentary films are comprised of three key elements. First, they honour and are grounded in "real" events and circumstances that happened, as opposed to being grounded in "unverifiable" (p. 7) situations. Documentary films are also about "real" individuals who are not performing roles, although one might argue the nature of "performance" especially when being filmed (Nichols, 2010). Lastly, drawing from Grierson's "creative treatment" notion, Nichols proposes that documentary films tell a story and that "the story is a plausible representation of what happened rather than an imaginative interpretation of what might have happened" (p. 7). Like documentary film, the ethnographic film genre is also one of ongoing debate (Heider, 2006; Nichols, 2010; Ruby, 2008). For example, if framed within Ruby's (2008) assertion that ethnographic film should refer to the work of anthropologists, ethnographic film can be described as a type of film grounded in anthropological work. Some scholars such as Heider (2006), however, approach the ethnographic film definition in a less restrictive manner, acknowledging that ethnographic films could range in their degree of "ethnographicness" (p. 2). We acknowledge the "ethnographic" in both Ruby's and Heider's descriptions, yet we did not want to limit the methodological possibilities in using filmmaking as an alternative form of scholarship. So, we frame our work within an arts-informed research framework as a "methodological enhancement" (Cole & Knowles, 2008, p. 60), to our other research approaches, and within the documentary film context set forth by Nichols (2010), as well as a visual research perspective (Pauwels, 2011; Pink, 2012; Weber, 2008).

CONTEXT

We are not professional filmmakers, nor do we claim to be scholars of film studies. We are colleagues and faculty members within a faculty of education at a mid-size and technology-focused university in southern Ontario, at different points in our academic careers. While there are similarities in our work, our research interests and methodologies are different. Diana, a self-proclaimed "recovering positivist," previously approached most of her research from a quantitative and mixed methods paradigm, while Janette engages in predominantly qualitative research. As researchers at a technology-focused university, we are interested in not only how multimedia influences teaching and learning, but we also each independently discovered how documentary filmmaking might serve as an alternative form of research in process and product. This special

issue's call for papers served as a catalyst to begin informal discussions between two colleagues regarding the abundance of multimedia within research yet the scarcity of such multimedia within with scholarly publications. After discussion and examination of each other's work, we realized that our work, although divergent in nature, led us to similar conclusions regarding the potential power of documentary filmmaking as a form of knowledge mobilization. While on a faculty writing retreat, the authors viewed each other's work in this area for the first time, and found a number of commonalities, yet some important differences in our approaches to using video in our research. This conversation prompted us to explore in more depth some of our epistemological notions and how they overlap.

DEFINING ELEMENTS OF DOCUMENTARY FILMMAKING

This section describes our individual experiences with documentary filmmaking as it relates to our scholarly work, and following Cole and Knowles (2008), we pay particular attention to the defining elements of this medium to examine our research purposes and methods.

Commitment to documentary filmmaking

DIANA: Inspired by a comment made by my 74-year-old mother while helping me unpack boxes in my new academic office at a southern Ontario university, I unintentionally stumbled into 1) making my first short documentary film, and 2) a new research methodology. "Look over there," she motioned wistfully. "I can see the house where we first lived when we moved to Canada." She shook her head, marveling at the discovery. "We were poor immigrants... and now my daughter is a professor at a university." Her eyes welled up with tears, as did mine. I instinctively reached for my camera, something I did frequently upon the recent completion of a 40-hour intensive and introductory documentary film course that focused on the technical aspects of documentary filmmaking such as camera components, lighting, and interview techniques. My previous research integrated digital video as part of the data collection during interviews, and served as the impetus for me to learn more about the technical aspects of documentary filmmaking to continue incorporating digital video into future research. Upon completion of my course, I frequently practiced capturing moments on camera to improve my skills. "Oh you and that camera," she turned away, wiping her eyes, "my English." I turned off the camera. I asked if she would like her granddaughters to know — to really understand — where she came from, her history, her struggles, and her victories. At the time, my request to capture my mother's story was for personal reasons — to help her tell her story for her grandchildren, and perhaps their grandchildren. She nodded slowly and turned back towards the window. "Yes, they need to know.... If only I knew then what I know now, I would not have worried so much." With that phrase, my first short documentary, *Coffee. Cup.*

(Petrarca, 2013) began, as did my unexpected transition into the rich qualitative world of interpretive biography, a method that studies the life experiences of a person by examining narratives, accounts, and personal documents that describe "turning-point moments" or moments that leave marks on the life of an individual (Denzin, 1989, p. 7).

JANETTE: As a former secondary English and drama teacher, I value the power of the story and particularly, the importance of lifting that story off the printed page and breathing life into it. My early research working with adolescents creating digital poetry (Hughes, 2007, 2008a; Hughes & John, 2009) inspired me to turn again to the notion of performing research through an arts-based lens. Unlike Diana, I knew from the outset that I would be creating a research documentary, and I specifically applied for a SSHRC dissemination grant for this very purpose. In 2011, I received an Early Researcher Award from the Ontario Ministry of Research and Innovation (MRI) for a research project entitled, "Fostering Globally and Culturally Sensitive Adolescents: Social Action Through Digital Literacy." The research examined the relationship between digital media and adolescents' understanding of global issues while immersed in using digital media and also explored how the public performances of students' digital texts might reshape the relationship between educational stakeholders (students, teachers, parents, schools) and the wider community both locally (within the classroom, school and neighbourhood) and globally (through the Internet, specifically via social media). As part of the three-year research plan, students shared their work in a variety of venues, both within and beyond the classroom context, including on a class blog, on the project website, at community art galleries, and on community organizations' websites, such as War Child Canada.

I wanted to disseminate key findings from this research through both traditional and more innovative methods, and I received the SSHRC dissemination grant to accompany the MRI grant. In addition to sharing our findings with the scholarly and educational communities through conference presentations and articles in refereed journals, I decided to create "research performances" similar to the ones created by the student participants. We (the research team) purposefully created a parallel between the classroom focus on performance and the methods of research dissemination, by relying on performance ethnography methods. The ethnographic performances were shared with the students and teachers, thus returning the stories to the classrooms and people from where they emerged. These performances are also posted on the project website, shared at workshops and conferences, and shared publicly through YouTube, social networking sites, and not-for-profit organizations with the target audience being K-12 students, teachers, parents, educational organizations, not-for-profit organizations, and the public.

Methodological integrity

Cole and Knowles (2008) argued that the rationale for using a particular medium to guide the research must be "readily apparent by how and how well it works to illuminate and achieve the research purposes" (p. 12). In retrospect, Diana realized that the inspiration that served as the catalyst for her personal documentary filmmaking project reflected a deeper exploration of a biographical problem or question. What began as an endeavor to simply capture a family story, blossomed into a deep desire to understand more deeply her mother's struggles and joys in learning a new language as an immigrant in the 1960s. For Janette, the decision to create a documentary depicting the research story was based in part on an acknowledgement of the important role of community, and a commitment to the public sharing of knowledge and understanding, as a key component of the research she was doing with the students.

DIANA: Growing up, my mother spoke frequently of her struggles of isolation, embarrassment, and learning English as a newcomer to Canada. Witnessing my mother's emotion evoked by the irony of seeing my childhood home from my university office, where many years ago she experienced her turning-point moment, ironically served as a profound turning-point moment for me as an educational researcher. Even though I heard my mother's anecdotes many times before, did I truly listen to what she revealed? Did I fully understand? I realized that moment that I did not fully understand but that I needed to document my process of understanding. I turned to my video camera to capture her experiences. Denzin (1989) describes such epiphanies as "interactional moments and experiences which leave marks on people's lives" (p. 70). Although my initial intention in creating the documentary film was personal in nature, it was through the process of recording and making editorial decisions that I discovered that documentary filmmaking, if guided by a question and methodological framework, could reflect an alternative form of scholarly publication.

JANETTE: We found that the performative potential of digital media facilitated exploration and creation of digital texts lending voice to the local and global issues that adolescents were most concerned about, for instance, cyberbullying, the impact of war on children, and how media contributes to one's perception of body image. The texts they created were, in turn, shared with others as a way of engendering social change.

The creative inquiry process

Both researchers have different methodological approaches to their research; however, both apply systematic guidelines in the collection and analysis of data in ways that tend to be somewhat linear. Notably, this was not the case for Diana in the research she came to do with her mother. The project was not intended to be research oriented, but rather a personal tribute to her mother and an attempt to capture her story for future generations. As she progressed

through the project, however, she began to draw parallels between the documentary filmmaking process and qualitative research methods, nudging Diana to consider the similarities between her previous data collection methods and her amateur documentary filmmaking processes.

DIANA: Prior to this first documentary, I used video as a teaching tool to capture students' creative endeavours, to create procedural or instructional types of video, or to simply record interviews (for audio transcription purposes) to supplement quantitative data in mixed methods research. With the purchase of my new camera, I began documenting my nieces' learning-to-read experiences, the stillness of nature, and my mother's tomato sauce ritual. While I had footage of family members and events, I had yet to practice the art of video interviewing. I wanted to practice setting up and conducting on-camera interviews as learned in my documentary course, and I welcomed the opportunity to practice with my mother. I practiced setting up the camera, the background, the lighting, and asking her open-ended questions during our conversation, to which she often responded using stories. I captured those stories on video. Figure 1 demonstrates an example of an on-camera interview incorporated into the documentary.

FIGURE 1. *Screenshot of example of interview video clip*

As I began the video recording (i.e., data collection), I quickly realized that the processes I incorporated to record my mother's daily behaviours and our conversations greatly resembled data collection strategies I incorporated into previous research studies. I did not have a formal protocol to guide my field procedures and interviews, but in retrospect, I realized I followed a similar routine once a week for 6 weeks attempting to maintain consistency. During my weekly visits with my mother, I set up my tripod and camera to record some of our conversations in between her routine behaviours such as making

appointments, running errands, making coffee, or cooking a meal. I refrained from staging situations and simply wanted to capture moments of her everyday life. I routinely asked questions much like I did in previous research where I incorporated semi-structured interviews. Although the questions were not formally developed prior to our weekly meetings, I did often reflect before and after our visits, contemplating areas I would like to learn more about. I wanted to gain a deeper understanding of her experiences and behaviours much like I would have when interviewing participants in previous research projects. I also faced many immediate decisions that ultimately were guided by the purpose of my project, which in this case was to learn more about my mother's "learning-to-speak English" story and the complexities surrounding her struggles.

JANETTE: In contrast to Diana's work, the intent to create a research documentary based on classroom interactions, student work, and interviews as data was an explicit goal from the beginning. When I began teaching in the preservice teacher education program, I created an e-book (Teaching Language and Literacy, K-6) for our teacher candidates. The e-book includes video of teacher / student interaction as well as a variety of classroom activities. The teacher candidates comment that the videos bring the concepts (i.e., guided reading or literature circles) alive in a way that is not possible through static images or print text alone. At the same time, I was involved in a SSHRC research project with a focus on "Students as Performance Mathematicians" and I contributed my expertise in the area of drama and digital literacies to help students express their understanding of mathematical concepts through multiple modes of expression. These experiences, combined with a growing movement in Canada by granting agencies to promote alternate forms of dissemination, led to my decision to use performance ethnography methods (Denzin, 2003; Madison, 2006) and capture still images, video footage and sound bites of classroom interactions. We had one video camera set up in the classroom that was left to record from a wide-angle position and another video camera that was hand-held to capture moments in the teaching and learning process from a closer perspective. In addition, we took hundreds of still images of students working on project tasks (predominantly using digital technologies) and also captured images of student products (see Figures 2 & 3).

FIGURE 2. *Creating a Tagxedo*

FIGURE 3. *Student Tagxedo*

Just like a traditional article, our documentary included images of student work and comments by students and teachers. The difference in a documentary is that we see these on a video, which tends to be more intrusive and shares much more evidence than a static picture — ethically, decisions about which videoclips to include requires much more scrutiny. As part of our research protocol we obtained district school board, parental and participant consent to use the still images and video footage; however, even though students and parents gave permission in advance, we asked students again before video taping whether it was okay to record them or take a photo of their work. If they hesitated or we sensed that they were not comfortable, we did not proceed. As noted earlier, we also had a camera set up to record classroom activities at all times so they were sometimes unaware that they were being recorded. Because we felt this was obtrusive, we showed the documentary to them before it was made public in order to confirm that the way they were represented was acceptable. We found that students and teachers were equally eager to appear in the documentary. Sharing educational research through performance-based video clips with educators, parents and the public in general helps make research findings tangible and accessible.

The subjective and reflexive presence of the researcher

Although Janette was not as close to her research participants as Diana was to her's, both researchers shared a subjective and reflexive presence in our research. In both of our experiences, data analysis and video editing went hand-in-hand and decisions about what material or footage to include and exclude was informed by our respective aesthetic sensibilities as well as our desire to tell an authentic story or represent classroom events accurately.

DIANA: Because this project began as a personal exploration of my mother's learning-to-speak English experiences, I did not have a formal analytical framework or formal underlying theoretical constructs guiding the editing / analysis. In retrospect, however, the analytical techniques used in my previous qualitative analyses permeated my editing processes. For example, I used the topics that emerged from the interviews as a guide for "coding" the reams of observational video footage. The iterative viewing of these video clips during the laborious editing process helped me notice descriptive patterns, similar to my previous pattern-coding (Miles & Huberman, 1994) processes when analyzing qualitative data.

As topics of convergence and divergence (Patton, 2002) emerged, I attempted to locate segments of video to best reflect those topics for the final documentary. While editing this personal project, the "researcher" in me wondered about other immigrants' experiences in Canada, and I began to search for research studies on the topic. The "newcomer to Canada" literature, consistent with the topics that surfaced in the analysis or editing phase of this work further guided my selection of video clips, archival photographs, and text / quotes to insert within the documentary film.

JANETTE: Video editing is an extremely time-intensive endeavour and as Diana notes, the repeated viewing of the same clips gives the researcher-editor an intimate connection with the data. The analysis was qualitative, in keeping with the established practice of in-depth studies of classroom-based learning and case studies in general (Stake, 2000). As noted earlier, data consisted of (a) detailed field notes, (b) students' writing, (c) transcribed interviews with students and teachers, (d) the digital texts created by students, and (e) video recordings of selected learning / authoring activities. For the purposes of the documentary, we focused on the interviews, the digital products generated by the students and the still and video recordings of the classroom activities. Because of the complex blending of multimodal data elements, we used the digital visual literacy analysis method of Hull and Katz (2006) of developing a "pictorial and textual representation of those elements" (p. 41), that is, columns of the spoken words from recordings juxtaposed with original written text, the images from digital texts, and data from interviews, field notes and video recordings. This facilitated the "qualitative analysis of patterns" (p. 41). The analytic methods included thematic coding and critical discourse analysis (Fairclough, 1995). The data was read and coded for major themes and sub-themes across data sources, and the codes were revised and expanded as more themes were identified. In the selection of data for the creation of the documentary, we were particularly interested in moments that might be interpreted as "turning points" (Bruner, 1994) in the representation of identity and / or the conceptual understanding of social justice issues for the students, and "aha" moments for the teachers as they observed their students engage

in the learning process. This required poring over the video data to find just the "right" clips that would tell the story of the research in those classrooms.

Centrality of audience engagement

In assembling the final documentary, many difficult decisions had to be made about which information to include and, possibly even more difficult, which information to leave out. The selection process was very much based on our desire to both inform and engage an audience in a topic we each identified as meaningful. For Diana, that audience initially was her mother's grandchildren but expanded to include extended family and then the scholarly community, and for Janette, the target audience was parents, students, teachers and ultimately, policy-makers.

DIANA: Upon completion of data analysis / video editing processes, the themes that emerged from the interviews and observations related to issues of social isolation, frustration, and fear of Margherita's "learning-to-speak-English" experiences as an Italian-Canadian immigrant. These themes represented what Denzin (1989) would describe as "moments of crisis" (p. 70), to the point where Margherita contemplated leaving Canada to return to her homeland. Margherita insisted that her life in Canada changed, taking a turn for the better, after learning her first two English words at a local high school offering a free English as a Second Language course in the mid-1960s. The two words, "coffee" and "cup," featured prominently in the final documentary, and along with the themes that emerged from the analysis, guided the selection of video clips to tell Margherita's story. In discussion with Janette, I realized that by making editing decisions to tell my mother's story, I was actually excluding other stories from being told. For example, there were additional anecdotes shared by my mother about her decision-making processes, alongside my father, to come to Canada; however, these anecdotes were not included in the final documentary. I wonder how the story might be different if these anecdotes were actually included in the film. Moving forward, greater reflection regarding the "untold" stories will be an additional factor in my editing decisions.

When locating and selecting clips to reflect the themes and topics that emerged in the interviews and observations, additional editing decisions were made to echo the emotion and tone captured visually in the video clips of the observations and interviews. Inclusion of music, images, words, photos, narration, quotes from newcomer to Canada research, and supplementary B-roll footage were also carefully selected to "truthfully" tell Margherita's story. Figures 4 and 5 are examples of how archival photos and literature respectively were included in the documentary film.

FIGURE 4. *Old photo of village included in documentary*

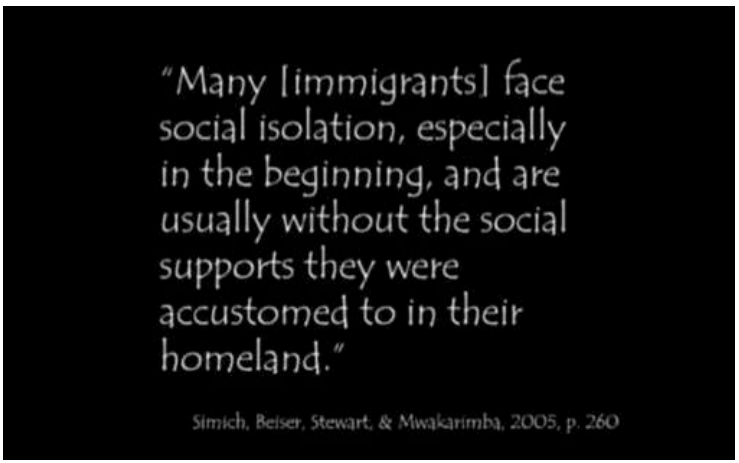

FIGURE 5. *Example of literature incorporated into documentary*

Rather than write a text-based biographical narrative, the final product to reflect the "findings" was a short documentary, *Coffee. Cup.* (Petrarca, 2013) largely due to my mother's initial melancholic comments made in my office that served as the impetus to begin this endeavour. Because the intended audience was my mother's grandchildren, and possibly future generations, I wanted to capture the gestural and facial expressions via video so that perhaps other viewers would "see" her story in a more emotive manner than text.

JANETTE: There was a temptation to include more of the students' images and work to honour their participation in the project. We had to continually remind ourselves of our purpose and the limitations we faced, for example, keeping the documentary under 22 minutes (the standard length for a one-hour television segment). We decided to frame the documentary with comments by

the researcher, explaining the research and the activities the students engaged in throughout the study. This framework enabled us to better structure the documentary and kept us focused on our purpose, which was to make the research findings more accessible to the general public. The juxtaposition of the scholar speaking about the purpose of the research with various still shots and videoclips of the research project offers the audience a rich and more personal look into the research itself. Still images of the students engaged in learning activities (see Figure 6) are interwoven with the classroom teachers commenting on the project (see Figure 7).

FIGURE 6. *Working on MacBooks*

FIGURE 7. *Still photo from interview clip with classroom teacher*

As Diana notes, it is difficult to decide what to include and what to omit as each decision serves to tell the story in a different way. We made decisions based primarily on the quality of the photos, but also tried to ensure that we included both boys and girls, and gave voice to the teachers and guests in equal measure. Video clips of a Lakota elder (see Figure 8) and award winning aboriginal musician Tracy Bone (see Figure 9) shown engaging with the students enable the viewer to experience, in part, what the students experienced in person. Snippets of student generated digital texts offer the audience a glimpse of the learning that took place from the student's perspective. The research documentary, *Exploring Social Justice Through Digital Literacies* (Hughes, 2013) can be viewed on YouTube at: http://www.youtube.com/watch?v=dZOt6RDhkVY.[1]

FIGURE 8. *Still photo from video footage of First Nations Elder*

FIGURE 9. *Still photo from video footage of Tracy Bone singing*

THE QUALITIES OF "GOODNESS" AND OUR DOCUMENTARIES

We have provided the context of our independent documentary filmmaking experiences, and described how independent of one another, the process by which we incorporated documentary filmmaking into our respective projects through a discussion of the elements of this medium. We now engage in a critical examination of how well our documentary films serve as an alternative form of scholarly work within educational research using the work of Cole and Knowles (2008) as a guide. Cole and Knowles (2008) suggested that a research study that encompasses intentionality, researcher presence, aesthetic quality, methodological commitment, holistic quality, communicability, knowledge advancement, and contributions, might potentially add to the arts-informed research agenda — "that of enhancing understanding of the human condition through alternative (to conventional) processes and representational forms of inquiry, and reaching multiple audiences by making scholarship more accessible" (p. 65). Guided by our claim that the academy ought to consider documentary film as an alternative form of scholarly work and knowledge mobilization outside the walls of the university, we consider these elements to support the claim for documentary film as an alternative form of inquiry accessible to a wider audience outside of the walls of the academy.

Intentionality and contributions

Our intentions for creating these documentaries were driven by our respective moral commitments to transformation (Cole & Knowles, 2008). Janette's intention to explore the impact on adolescents' learning when given opportunities to create digital texts for a wider audience and engage with social justice issues on a global scale was driven by both moral and intellectual purpose. The research positions adolescents as agents of change as they produce digital texts based on issues identified through the UN Convention on the Rights of the Child, such as the impact of war, child labour, poverty and environmental concerns. Diana's intention was also deeply rooted in a moral commitment to share her mother's poignant story with her family so that future generations would be able to see, hear, and appreciate the struggles she faced as a newcomer to Canada to make a better life for those who would view the final film. Midway through the process, however, by seeking additional literature and data about newcomers to Canada, unknowingly, Diana's original moral purpose to capture and share her mother's personal story with family members broadened to include an intellectual purpose. Personally moved by her mother's appreciation for any opportunity to learn, Diana's intention expanded. She wanted to share with wider audiences how the power of education transformed the life of an immigrant woman contemplating to leave her new country due to feelings of isolation and frustration with wider audiences. Related to the moral purpose of arts-informed research include the contributions of the work within theoretical and practical contexts, and their theoretical and transformative

potentials (Cole & Knowles, 2008). We both sought the documentary film art form so that audiences within and outside of the academy walls could have the opportunity to view the work from a theoretical and / or transformative position. We see ourselves not only as researchers contributing to the scholarly advancement of knowledge but we also strive to serve as agents of change.

Methodological commitment

With the proliferation of digital video recording technologies available to consumers, and with an increase of researchers in behavioural and social sciences and the humanities exploring visual research (Pauwels, 2011), it seems logical that forms of "publication" other than the peer reviewed text-based scholarly journals or books should also be considered scholarly by the academy, if framed within a research context.

Our conduct throughout the documentary filmmaking process provides evidence of principled processes throughout various stages of the documentary filmmaking. For example, Janette, whose intention was research oriented at the onset of the work, paid careful attention to ethical considerations, as required by researchers conducting work with human participants. Diana, on the other hand, whose documentary film was originally not research oriented in nature, reflected frequently throughout the filmmaking process on her previous research work with other human participants, being careful to not appear coercive and instinctively seeking approval to film or continue filming, particularly emotional interviews. These actions were guided by her previous work with research participants. We reflected frequently on our documentary filmmaking decisions to maintain the integrity of the research / film and the participants.

Researcher presence and holistic quality

The presence of the researcher in an arts-informed research is another quality of goodness as described by Cole and Knowles (2008). Janette's presence as narrator within the documentary is explicit — she appears in the video and her voice provides the narration (Cole & Knowles, 2008). Diana, who was extremely close to the subject of her documentary, was also "present" by implication. Like Janette, Diana also narrated the documentary when its intention was for personal (i.e., family) use. Upon broadening her intention for research purposes, she re-recorded the narration, substituting her voice for the voice of a friend experienced in voiceover work. Ironically, her rationale for removing herself from the narration was to give the final product a more neutral position as a work of research. Interestingly, audience members who viewed both versions of the documentary preferred her voice as narration, indicating it felt more "real." Her motivations for re-recording the narration clearly reflects remnants of her positivistic paradigm, and only in discussion with Janette did Diana realize that the

"realness" expressed by viewers reflected the "signature or fingerprint of research-as-artist" (Cole & Knowles, 2008, p. 66), and that by removing her presence an element that gave the work realness was removed. How would other members of the scholarly community with paradigmatic differences view the research?

The re-recording was in part largely due to the holistic quality of the documentary film, described by Cole and Knowles (2008) as somewhat contradictory to the more traditional and linear types of research experienced by Diana, where there existed more distance between the researcher and participants. Through conversations with Janette, the more integrated nature and ontological underpinnings of arts-informed research became clearer, and resulted in a more holistic approach to research by both of us. Again, how do we deal with the traditionalists? How do we convince them that this is research?

Aesthetic quality

As previously mentioned, we do not claim to be filmmakers but rather researchers advancing knowledge through a visual form — documentary film. In both cases, the film was the "medium through which research purposes are achieved" (Cole & Knowles, 2008, p. 66), even though the purposes of our research projects varied. As part of our respective data collection phases, we have both described elements related to digital video recording such as setting up shots, angles, lighting, and interview techniques. When selecting shots in post-production, we also reflected on how the final product (i.e., a visual form, the documentary film) influenced the process of data collection and final output. For example, how do the aesthetic qualities of captured video footage influence editorial choices for the final documentary? How do aesthetic qualities influence data collection? Aesthetic decisions regarding music, narration, and images during editing were also considered from both aesthetic and research perspectives. We spent considerable time discussing our decisions and the underlying motivations for capturing data and making decisions in the post-production phase of the process. For example, Diana's mother referenced several times in raw footage that was not included in the final documentary, how her decision to come to Canada was made real when she was sitting on the deck of the ship in Naples with her husband, waving tearfully to their emotional family members at the port. As a result, Diana searched tirelessly for a sound byte of a ship's horn to accompany the archival photo of the actual ship that transported her parents to Canada to honour that moment via sound. Similarly, Janette wanted to include music to fill in the gaps between narration and teacher interview clips, and found it challenging to identify copyright-free music that would complement the documentary. Much like data collection and analysis for the purpose of a more traditional research paper, we believe constant reflexivity regarding aesthetic decisions,

framed within the original question(s) guiding the visual research is critical to maintain the rigor the academy demands from its researchers.

Communicability

Our underlying intentions of creating a documentary film to share our respective "stories" included the communicative potential of the form (Cole & Knowles, 2008). Our underlying assumptions that documentary films attempt to share "real" happenings within the world (Aufderheide, 2007; Nichols, 2010) in a manner that is creative or imaginative (Nichols, 2010) guided our decisions to intentionally select documentary filmmaking as a medium to advance knowledge and make scholarship more accessible (Cole & Knowles, 2008).

We each selected methods to explore our respective topics in a manner that would "provide the best understanding of a research problem" (Creswell, 2003, p. 12), but also to mobilize the "real" occurrences to others outside of the academy. We each turned to visual images to guide our work (Weber, 2008), culminating in a documentary film as a way to represent the output or presentational format (Pauwels, 2011) of our "truth" seeking. Weber (2008) maintained that such integration of visual images to guide work could benefit the social sciences and humanities in a variety of ways:

> To sum up, this ability of images to evoke visceral and emotional responses in ways that are memorable, coupled with their capacity to help us empathize or see another's point of view and to provoke new ways of looking at things critically, makes them powerful tools for researchers to use in different ways during various phases of research. (p. 47)

Knowledge advancement

As noted by Cole and Knowles (2008), "the knowledge advanced in arts-informed research is generative rather than propositional and based on assumptions that reflect the multidimensional, complex, dynamic, intersubjective, and contextual nature of human experience" (p. 67). We are aware that we consciously chose to tell our stories in specific ways, in order to best communicate our desired themes and purposes. Our real world purposes and problems in our documentary films varied in nature, as did our approaches, but both films had underlying questions that sought to explore various "truths" and illuminate the lived experiences of the research participants via "visual" methods as a way to explore and share particular phenomena. We both selected the visual medium of digital video because we believed that "insight in society can be acquired by observing, analyzing, and theorizing its visual manifestations: behavior of people and material products of culture" (Pauwels, 2011, p. 3). Framed within a research perspective, we sought to examine what Johnson and Onwuegbuzie (2004) describe as lowercase "t" truths or temporary truths or knowledge that as researchers we obtain through our research, and could change over time. As Creswell points out, "truth is what works at the time; it is not based in

a strict dualism between the mind and a reality completely independent of the mind" (2003, p. 12). Both final documentary films reflected stories of "plausible representation of what happened" within the individual projects as opposed to an "imaginative interpretation of what might have happened" (Nichols, 2010, p. 7).

CONCLUSIONS

We believe that a documentary film can capture that "provisional truth" if the researcher / documentary filmmaker presents findings in a manner that keeps ethical considerations at the forefront of the editing process when preparing the final output or film (Hampe, 2007). We agree with Hampe (2007), who points out,

> the ethics of documentary filmmaking should concern reflection on the practice of documentary filmmaking. It is not about judging individual actions or describing what is the right thing to do in a given situation. Instead, it is about the principles that inform deliberations and decisions about the right thing to do as a documentary filmmaker. (p. 531)

The research documentary, as it was employed by both authors, is both an aesthetic performance and an attempt to tell that provisional truth of which Hampe (2007) speaks. The documentary film's potential to mobilize knowledge in similar ways to a traditional research paper, especially if the documentary filmmaking process follows the trajectory of research processes, might serve as a loose guide to legitimize the final product as scholarly work. Indeed, a research documentary allows us to hear the voices of the participants directly in a way that allows us to capture the nuances of gesture, facial expression and vocal intonation and emphasis. If similar processes are used and attention is paid to questions of validity, we might ask whether documentary filmmaking could serve as an alternative form of "publication" within the academy.

Given the increasing access we have to digital media, mobile devices and ubiquitous use of the Internet, we should be redefining or reconsidering our current approaches to data collection, analysis and dissemination. Shrum, Duque, and Brown (2005) suggested we consider digital video as an "innovation in research practice rather than simply a new medium for recording social behaviour" (p. 17) in our 21st century world. Innovation is not simply a product or process that does something different, nor can it be reduced to something that simply improves a particular condition, but rather innovation refers to both change and improvement (Vaughan, 2013).

Our respective documentary works and discussion helped us realize that digital video is not "simply a new media" to gather data or "record social behaviours," but rather we suggest the documentary filmmaking process and product as research did something "different" and "better." We believe this

work is innovative because it refers to both *change* in how we approached and considered data collection, analysis, and mobilization, and *improvement* of data interpretation and mobilization.

First, by incorporating a multisensory video-based final product — intended to be viewed rather than read by an audience — into the research, as researchers, we not only considered the collection and analysis of data, but also the preparation of the data for dissemination purposes. This required us to be mindful of the final film, which introduced a "performative" element into the research process. Hughes (2008b) suggested a metaphor of "research as performance" (p. 30) might be a useful way to consider research using new media, which includes digital video for documentary filmmaking purposes. For example, rather than simply setting up a camera to capture interviewees or observe participants for data collection purposes, our respective considerations of the data shifted to include the more aesthetic components of video recording such as lighting, background objects, or sound quality. These video clips now held a dual purpose. They represented pieces of data to be analyzed, and potential nuggets of video to be incorporated into the final film. For us, this changed how we approached data collection and / or analysis as we reflected more frequently on the validity of the data. We continually considered whether the video clips represented the collection or analysis of the "observed," or if the video was collected or included for artistic purposes.

We believe this improved our practice as researchers in that we were more mindful of the research process by completing self-checks to maintain the integrity of the data. For example, the editorial decisions shifted how we approached the final reporting. We continually reflected on whether the video clip represented our analyses. Lastly, by incorporating documentary film into the research process, the manner in which the audience might interpret the data analysis also changes. No longer is the audience faced with text or numerical data printed on the pages of an academic journal for review and consideration; but with a documentary film, the audience is provided with a variety of sounds and images, shifting how the data might be analyzed or interpreted.

The print journal article has been privileged in research dissemination despite the fact that researchers can now express themselves through multiple modes that go beyond print text. The use of documentary film not only allows the researcher to use the camera to capture moments of and analyze individuals' lives but also presents the lives in a non-traditional research format, accessible and perhaps more palatable to a wider audience than those who subscribe to academic journals. We agree with Aufderheide (2007), who argued that "a documentary film tells a story about real life, with claims to truthfulness. How to do that honestly, in good faith, is a never-ending discussion, with many answers" (p. 2). We conclude by substituting "documentary film" with "research paper." What results is a thought-provoking connection *or* intersection of / between research and documentary filmmaking.

NOTES

1. Permissions were obtained for all who appeared in the video and for the video's dissemination.

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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 21st 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 20th 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 21st 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 21st 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 20th 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 21st 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 21st 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.

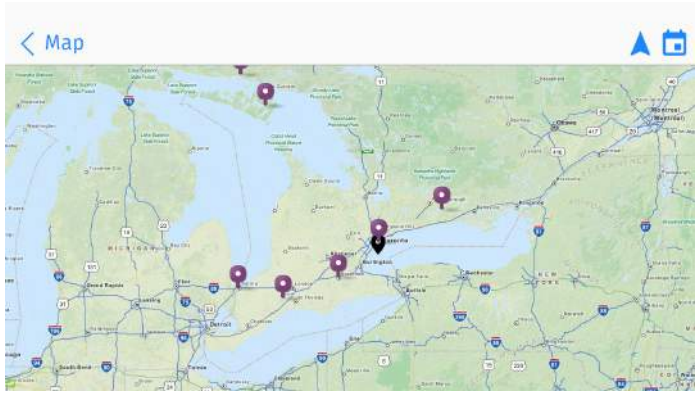

FIGURE 1. *Map of the residential schools*

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).

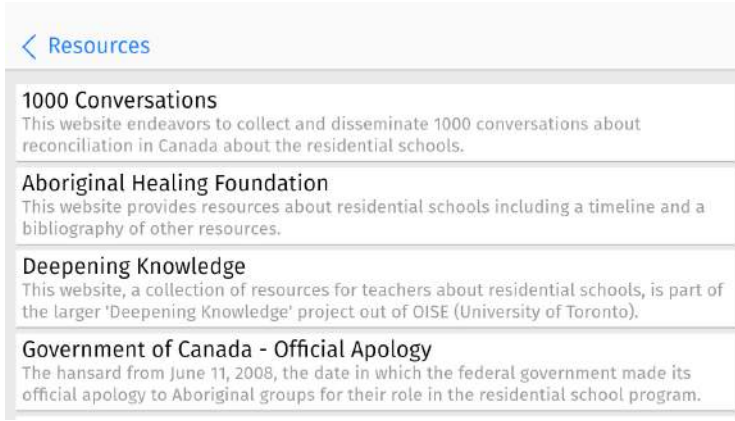

FIGURE 2. *Collection of resources*

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.

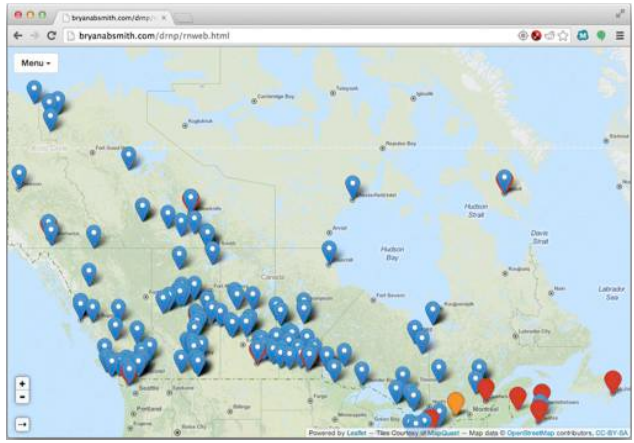

FIGURE 3. *Screenshot of RNWeb*

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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A TALE OF TWO SITES: CELLPHONES, PARTICIPATORY VIDEO AND INDIGENEITY IN COMMUNITY-BASED RESEARCH

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ABSTRACT. This polyvocal text is both a narrative and a dialogue between two scholar-activist researchers working in rural communities in distinct parts of the world — South Africa and Southern Mexico — sharing their experiences of using cellular phone and camcorders, while also exploring the potential sustainability of these technologies in the context of rural communities engaging with participatory video projects. These communities are not only playing an increasingly salient role as the mediators of this technology, but through their practices they are drawing much needed attention to the ways in which the researcher — participant dynamic in participatory video practices can be transformed into a more autonomous and participant-led set of practices. The article considers the ways these media forms carry the potential to imagine and honour different worldviews.

UNE HISTOIRE, DEUX ENDROITS : TÉLÉPHONES CELLULAIRES, VIDÉO PARTICIPATIF ET INDIGÉNÉITÉ DANS UN CONTEXTE DE RECHERCHE COMMUNAUTAIRE

RÉSUMÉ. Ce texte plurivoque est à la fois un récit et un dialogue entre deux chercheurs universitaires activistes œuvrant au sein de communautés rurales situées dans deux parties distinctes du monde — l'Afrique du Sud et le sud du Mexique. Ils partagent leur expérience d'utilisateurs de téléphones cellulaires et de caméscopes, tout en explorant le potentiel de viabilité de ces technologies dans le contexte de communautés rurales engagées dans la réalisation de projets de vidéos participatifs. Non seulement ces communautés jouent-elles un rôle de plus en plus important comme médiateurs de ces technologies, mais elles attirent par leurs pratiques une attention indispensable sur les manières dont la dynamique existant entre chercheurs et participants dans des pratiques de vidéos participatifs peut être transformée par des règles plus autonomes et établies par les participants. Cet article s'intéresse aux manières dont ces médias ont le potentiel de représenter et mettre en valeur diverses visions du monde.

The use of participatory visual research through video cameras and cellphones is altering the ways in which communities might choose to represent themselves and their own concerns about what is important. Indeed, as is highlighted in recent publications about participatory visual methodologies (see Milne, Mitchell & de Lange, 2012; Mitchell, 2011), this is particularly the case in relation to marginalized communities who have typically been the "objects" (if noticed at all) in social research. Moreover, the relatively easy access to video equipment has in some cases changed the relationship between the researcher and the researched, and as we explore here has sometimes cut out the researcher role completely to the point where DIY (do-it-yourself) practices typically associated with an urban youth participatory cultures movement can just as likely be found in communities in rural South Africa or Mexico. In this article, we write as two researchers invested in community-based research through participatory visual methodologies such as photovoice, digital storytelling, and, as we describe here, participatory video. Over the past two decades, participatory video research (PVR) has become an increasingly popular approach to engaging communities, and has been used amongst a variety of groups including media activists, visual researchers, arts-based researchers, and community-based researchers. It has also become an important method used in various disciplines within academia and can be understood as a conscious attempt by researchers to not only address discourses and practices of dominance, but also explore the critical nexus between academia and activism. One of the principle aims of PVR is to use the process of media production to empower people in order to engender social change through research (Milne, Mitchell & de Lange, 2012; Mitchell, 2011; Pink, 2013; Yang, 2012), allowing the researcher and his / her research to have a tangible effect upon the community with whom they are collaborating.

We frame our work within Sudbury and Okazawa-Rey's (2009) idea of activist scholarship, which they defined as "the production of knowledge and pedagogical practices through active engagements with, and *in service of* [emphasis added], progressive social movements" (p. 3). They drew attention to the compatibility of a broad range of community-based approaches that could be used within an activist agenda, something that is echoed by Flood, Martin and Drehner (2013), who wrote about combining academia and activism: "the increasing emphasis on 'community engagement' or 'outreach' across the university sector provides a valuable means to legitimate activist work, as well as opportunities to shift institutional expectations" (p. 22). We are interested in furthering this work through a consideration of Indigenous activist scholarship (Zavala, 2013), particularly as highlighted in Josh's work in his own community in Mexico. At the same time, and building on the reflexive nature of working with participatory video (see Yang, 2012), we seize the platform of a research article to engage in a complex blending of both different perspectives / standpoints and self-reflexivity about our work with participatory video, and, in so

doing, set up a critical dialogue of sorts. What can we learn as we engage in this "tale of two sites"? How are digital platforms central to this work? What are some of the tensions, particularly in relation to what counts as activism in this work? In the first section Claudia reflects on her work with cellphones in rural South Africa, focusing on one cellphilm, *Village Gathering*. In the second section of the article, we offer Josh's account from his work as an "insider" using participatory video in his grandfather's village in Mexico. We then go on to consider some of the implications of this work for research in two key areas of social research informed by culture, tradition, and intergenerationality: (1) youth and sexuality in the age of AIDS in South Africa, and (2) language revitalization in Mexico. In a final section, we highlight the ways in which the digital opens up a space for new audiences and how this might link to activism.

A TALE FROM RURAL SOUTH AFRICA: CLAUDIA'S ACCOUNT

> ...cellphilms made with a cellphone for a cellphone...
>
> (Dockney & Tomaselli, 2009)

I am not quite sure what it is about Nikiwe's cellphilm about butchering a sheep — *Village Family Gathering* — or why it has become something about which I feel compelled to write. To understand it fully you would have to start back several months before Nikiwe produces her cellphilm, back to the time that I am holidaying in Iceland with my three adult daughters, and where we take turns filming our travels together using a cellphone. Perhaps it is more about me than it is about my daughters when it comes to being obsessed with Denzin's (2003) idea of the cinematic interview: "tell me about why you are wearing what you are wearing today," "what do you think of the food?", or "we are three days into the trip — what do you really think?" It is amusing (or so I think), and at the end of our trip we have a delightful and humorous (and occasionally serious) "selfie" account of our days together. While we are all busy also capturing our trip through digital cameras, it is the presence of the cellphone that offers the "on site" reflexive eye. The experience of creating the cellphilm on our Icelandic trip lands squarely back in the middle of a research project using cellphones that I had initiated with several colleagues in South Africa, working with two groups of rural teachers, one group of six (including Nikiwe) from Eastern Cape and another group of twelve from KwaZulu-Natal. The teachers had already been working in small groups to produce cellphilms on the topic of what they saw as they challenges and solutions to addressing such issues as HIV and AIDS and poverty in their communities. (Mitchell & de Lange, 2013a; Mitchell, de Lange, & Moletsane, 2014). However, almost overnight the ubiquitous cellphone as a tool for group representation in a research project on HIV and AIDS reinvents itself as a tool for self-representation, and the next time that I meet with the teachers following my trip to Iceland, I tell them a little bit about family filming and reflexivity. What I mostly highlight is the idea of using the cellphone — and the skills that we had learned together

about cellphilm production — in our everyday lives, and an invitation is issued to the teachers to share whatever cellphilms they come up with the next time we meet. They term it their "homework," and many arrive back at our next workshop 6 weeks later with a whole collection of their own cellphilms. While two of the teachers use their cellphones to document their school environment, most of the cellphilms go right to family with titles such as, *Kimberley Nerwande*, *Lindi's Family Christmas Party*, *Julia's Home Video, My Beloveth Kids*, and *Village Family Gathering*. It is Nikiwe's cellphilm, *Village Family Gathering*, that totally captures my attention — perhaps because it feels less staged and, indeed, is perhaps a perfect "insider" film of what is more typically seen as the work of an outsider documentary filmmaker. It is a four and a half minute production, filmed at a rural homestead or *kraal* as it is called. Her carefully filmed segment depicts a group of male relatives and friends just outside the main house cutting up a sheep that has been just slaughtered. It is late winter in the Eastern Cape and there is not a lot of colour in the background. There is no real sound track in the film except for banter, a steady "Q and A" of what is happening and why, occasional comment by one of the men speaking in Xhosa, and sporadic outbursts of laughter and camaraderie. It is not just the filming of the ritual that we get through the back and forth banter, but a deep local history of the ritual and especially a sense of the patriarchal structures in place:

> Participant 1: For the boys' ration, you set the brains aside even if you put them in a tin, but you set them aside.
>
> Participant 2: Yes! That's how I know it too.
>
> Participant 3: No, here you cook the sheep's head with its own brains then you'll be given the brains and eat them.
>
> Participant 1: Oh! No! They are penny-pinching! That means one cannot even share one half of the sheep's head with women!
>
> Participant 2: No, women don't get anything! The head belongs to men, all of it.
>
> Participant 3: That's why it is said it's the "men's head."

With a steady hand and an alert eye, Nikiwe takes us through the process of the butchering, step by step — especially the preparation of the sheep brains — occasionally panning to the wide open landscape and then to close up shots of someone's 4 X 4 or brand new BMW, all haphazardly parked in the *kraal.* We are aware of Nikiwe's voice from time to time, though there is no sense that the men are performing, and even the finale depiction of one of the men putting the sheep's head on his own head seems somehow natural — and that it is just what they would do even if there was no camera. There is also something haunting about the juxtaposition in just one short film of both the ultra-modern world as signaled by the very modern (and expensive) vehicles and of course Nikiwe's filming using her cellphone, and the traditional world of the village gathering, all capped by the "men's head" humour at the film's end.

A TALE FROM MEXICO: JOSH'S ACCOUNT

Ni chigueeda guixhí ne huidxe láninga' cayunidu' nagasi.
[The future is what we make of it today.]

(Zapotec proverb)

This is a story I often tell and retell because it is through its retelling that I continue to learn more about our ancestral Isthmus Zapotec traditions and further develop my relationship to our traditions and ancestral practices. Through this story I have also come to reflect on my particular understanding of participatory video and the potential role technology can play in our community's struggle to preserve, promote, and strengthen both our language and culture amongst our younger generations.

"¡*Queso! Guetazee', totopos, totopos,* ¡*guetabiza!* [cheese, fresh corn tamale, Zapotec tortillas, blackbean tamale]": these are the common terms heard at the central market in my maternal grandfather's village of Union Hidalgo, a relatively small Indigenous Binnizá (Zapoteco) community located in the Southern Mexican state of Oaxaca near the Pacific Ocean. It is in the central market in our community where my story begins. The smells of cocao and fresh cheese perfume the air, the sound of women's laughter can be heard as they tell each other stories in Zapotec; all the while people weave through the stalls looking for ingredients for tomorrow's meal, or youth stroll through getting ready for a late night meal — what is typically referred to as *cena*. That night our media collective, Binni Cubi, as part of our community cinema night, was projecting in the central market a documentary entitled *Ramo de Fuego* [Blossoms of Fire], which focuses on Isthmus Zapotec women's practices, such as embroidery for traditional regalia and gastronomical practices, but also critically explores the complex gender relations in our communities. It also attempts to dispel constructed notions that our communities are matriarchal. We choose to screen this documentary because we thought it would be fitting to show in the marketplace, a space that is almost wholly dominated by women.

After the screening of *Ramo de Fuego*, an 83-year-old elder named Na Modesta Vicente approached us to thank us for projecting the film, but wondered why we did not screen anything about our own community's traditions, to which we replied that unfortunately we still didn't have our own documentary nor did we know of any videos on these food practices to show to the community. Na Modesta then expressed her interest in making a film with us that documents her recipe for *guetabiza* or blackbean tamale. She told us that she was getting older and wasn't sure how long she would be able to continue her practice. She felt it would be important to leave something not only to the town but also for her young granddaughter, who bears her name. This moment would mark the beginning of our Zapotec media collective's second documentary, entitled *Na Modesta*.

For our collective, the main aim of making this documentary was twofold: first we felt our community needed an archival record of these ancestral practices for future generations to experience and be able to watch, so they could learn from it since our community is experiencing an alarming decline of these practices, particularly amongst our younger generations. Second, the film was much more than just an archival record for future generations — our collective saw the film as an opportunity for our community to celebrate the fact that in spite of colonization and subsequent attempts at cultural assimilation, as Zapotec people we have successfully retained our way of life. Like us, Na Modesta understood the documentary to be both a reaffirmation and celebration of our local customs — a video record of her recipe for future generations — but there was more to it for her than we could have understood at the time. That is to say, it was not until commencing the process of filming Na Modesta preparing the *guetabiza* that our collective could fully appreciate her actual goal.

Making guetabiza and capturing it on video

The day before filming, our collective went to visit Na Modesta to discuss the documentary in detail in terms of the interview questions we had in mind. In addition to this, we were attempting to understand the actual process and the steps involved in the preparation of *guetabiza* in order to anticipate a possible storyline and shots we might want to focus on. We also asked her when she wanted us to come by to film the process of her making the tamales. To our surprise, she insisted we come by later that evening. I recall being confused as to why Na Modesta would expect us there so late and thinking the lighting would be difficult for capturing anything on film. As I was leaving my house my uncle asked me where I was going with a camera in hand and what I was filming. I told him that we were making a film of Na Modesta making *guetabiza* and about my confusion as to why she would want us there so late. This was followed by laughter from my uncle, who realized how unfamiliar I was with the process of making that kind of tamale. He said that it is a very labour intensive dish to prepare, something that cannot be made the same day like the other tamales, which is why, he said, not many people make *guetabiz*a anymore, noting that Na Modesta is one of the few people in Union who still takes the time to make this dish.

Later that evening, we meet Na Modesta and almost immediately upon arrival she got some of us to collect some firewood as she was rinsing off the corn to prepare to cook it. She asked us to bring the firewood to the clay oven, located outside of her house in a wooden shed beside the *cebia* tree. As we entered the space, there was a faint smell of dried corn-husks or *bacuela* as Na Modesta would later tell us. With the smell of burning wood in the air and the crackling of the fire in the background, Na Modesta began to tell us stories or *ní nizaacaa* — personal stories about her childhood, about our community and how much it has changed since she was young, about the person

who taught her to make this dish, and about why she continues to make it. In many ways, she was continuing what once was so natural to everyone in our community before the introduction of television and the internet. According to my *bixoze-bixozebida* [great grandfather], the practice of telling stories at night, not only as a form of entertainment, but as a way to pass down values, practices, and beliefs about our Zapotec lifeways, was once an everyday phenomenon. For me, this is a practice I know well from being with my elders, including my great grandfather, who would on many occasions ask us to sit under our mango tree so he could tell us stories about Union, his experiences in the cornfields, or jokes just to make us laugh. But now, even in my own family, this practice of storytelling is no longer as natural, especially after the recent passing of my great grandfather.

The next morning Na Modesta wanted all of us to meet her before sunrise — many of our elders still believe that we should always welcome the sun every morning as a way to show our gratitude for everything it continues to give, such as the corn that sustains us — to watch her wash the corn and go to the *molinero* [the grinder] to process the corn into *cuuba* [dough]. Upon returning with the *cuuba* in hand, Na Modesta began the process of making the *guetabiza*. As she began to prepare all the ingredients for the dish, she slowly began naming the ingredients of her dish in Zapotec: "gui' ña, sidi, cuuba, bitiaa, zá, bizaa." She insisted everyone repeat them and try to commit them to memory. Besides reciting the ingredients in Zapotec, she also encouraged those of us who were not filming to taste the *masa*, feel it and mix it, as she told us about the process itself. While she was grinding the beans, *chile* and *epazote* on the upright pestle and mortar, she asked us to gather around her closely as not to miss anything, and I can recall the smells of the ingredients and the sound of the grinding of the ingredients between the pestle and mortar.

Eventually, Na Modesta encouraged us to try grinding some of the ingredients ourselves to feel the weight of pestle and mortar. Though this request seemed trivial, we experienced it as a rupture of the barriers we had assumed were structuring our project: we were playing the role of the ones documenting, sitting behind the camera, passively watching and recording (and tasting of course!), and she was in the role of the expert in her craft, putting on this display for us to capture for posterity. I remember being taken aback by Na Modesta's request. I must also admit I was, oddly enough, quite apprehensive to even try, thinking I might not be doing it right (and on camera), and of course I wouldn't do it right because I had never done it before. But that was Na Modesta's point. It was curious to note that many of the younger members took to this invitation much faster than older members like myself. But I did finally try placing the tamales into the *Zuquii* (clay oven). Na Modesta wanted us to feel the heat of the oven that had been burning since the night before and also wanted to illustrate that there was a certain technique to placing the tamales without burning yourself or the tamales.

The experience of helping with the tamales reminded me not only of stories my grandmother had told me about her childhood, working with her mother as they used this clay oven to make *totopos* and cook meat, but in an odd way, I felt it brought me closer to really understanding their experience of cooking and preparing our traditional foods both on a physical level and psychological level. At that moment, I felt more connected to them, to my grandmother, as well as to my ancestral lifeways. Moreover, throughout this process, Na Modesta also invited us to ask as many questions as we liked about what we were experiencing and seeing. Someone asked, "how do you know when the tamales are done?" "Do you time it?" She illustrated her answer by showing us that she places an *epazote* leaf on top of the lid of the oven and once that leaf is fully dry, you know your tamales are done. She even got us to smell and touch the *epazote* leaf right before she took them out to get us to understand all of the steps involved in the process of making *guetabiza.* Once the tamales were cooked, Na Modesta took them out of the *zuqui*i and immediately offered them to us to taste and experience what it was to have a fresh *guetabiza* — something that many of our elders would have experienced as children.

Upon finishing the filming process, our entire collective then reviewed our footage to make sure we had captured the process in its entirety as well as to see if we needed more b-roll (extra footage captured to enrich the story you're telling and to give you greater flexibility when editing) to fill out the documentary. As we continued to review the footage, we came across a seemingly insignificant phrase uttered by Na Modesta: "I have taught you my recipe; now you can make it yourselves." It was then that we understood her — Na Modesta was transmitting her knowledge to us through practice, through the *doing* in the same way that her mother passed it on to her and her mother before her. In learning to make this ancient food through participating in its production, we had become part of the continuum of our culture, part of its survival over millennia. It was an astounding insight from such a seemingly mundane experience.

APPLYING NIKIWE'S AND NA MODESTA'S INSIGHTS TO PARTICIPATORY VISUAL RESEARCH: INDIGENEITY AND DIGITAL MEDIA

> Indigenous people…take changes in their way of life, such as technology, and shape them to their own values, purposes, enjoyment, always aware that the past continues to be ever-present.
>
> (Masayesva, 2000, p. 232)

What are we to make of these two "sights" of Nikiwe and Na Modeseta? How might we examine these digital pieces in the context of indigeneity?

CLAUDIA: It wasn't until Nikiwe and the other teachers screened their individual cellphilms that I began to fully realize the potential of working with what might be regarded as a local technology — the ubiquitous cellphone — as

a multi-modal tool for self-representation. When I first proposed to a funding agency the idea of working with cellphones with teachers in rural communities in South Africa and in the context of high rates of HIV & AIDS, I think I was enamored with the idea of the low cost technology of the cellphone (as opposed to using video cameras) in participatory visual research. I was also taken with the potential for ownership through "cellphone to cellphone" dissemination, both issues that had long concerned our research team in our work with participatory video (de Lange & Mitchell, 2012). Typically in our work in rural South Africa, a school or community would not have a DVD player or an LCD projector and so could rarely screen the videos that they had produced after the research team left. When this equipment was purchased for a school, there were new issues of custody and access. The cellphone looked like it would be the answer to addressing many of these issues. Though I included in the research proposal a rationale for a project that referred to indigeneity, I don't think I had fully imagined what that would look like, or what the use of a technology would be when it was not the research team bringing in video cameras, but rather coming to work with a technology that was already there. In fact, there was a humorous exchange in the very first workshop with the teachers when we, the research team, pitched up with our relatively low tech Nokia XO1 cellphones purchased for the project, and the teachers themselves took out their high-tech Blackberries and iPhones. They wondered aloud if they "had to" use the Nokias, and it is worth noting that Nikiwe's *Village Family Gathering,* so beautifully filmed, came from one of these high-tech phones. At the same time, there is also something slightly unsettling to a research team about not bringing anything new. Technology itself, its "bells and whistles," can be part of the enticement for participation and perhaps a type of colonization in itself as I reflect in my fieldnotes after our first cellphilm workshop:

> Our car is loaded with technology: a couple of laptops, an LCD projector, various wires and cords — and a collection of Nokia cellphones purchased for the workshop. It is the cellphones we now worry about... will the teachers think the whole thing bizarre? Why would they want to spend a day playing with cellphones anyway, especially as it turns out that cellphones are banned in the school — at least for the learners? Video cameras look, well, interesting; we would be bringing something new. But what do we do after an opening line that goes something like, "good morning. How many of you have a cellphone? What do you normally use your cellphone for? And have you ever produced a cellphilm?" (Excerpt from Project Fieldnotes, March 21, 2012; Mitchell, de Lange & Moletsane, 2014)

The real point of the local is that it is "there" or comes from somewhere else but is adapted to and by the local. This is exactly the context for cellphones, something that is highlighted by De Buidjin, Nyamjoh and Brinkman's (2009) in *Mobile Phones: The New Talking Drums of Everyday Africa* and by Powell's (2012) *Me and My Cellphone*. There are many meanings that we could attach to *Village Family Gath*ering with none of them explicitly linked to anything

to do with HIV and AIDS or poverty (the focus of our research study) but yet significant to the project overall. On the one hand, it is Nikiwe, a woman from the community, who is capturing all of this on her cellphone, and there is something noteworthy about her own agency in a context of patriarchy and the idea of the "men's head" as reminder of the deep rootedness of gender inequalities. At the same time, she captures through her cellphone issues such as the following, which are all attached to the social realities of HIV and AIDS: mobility and migration (between the city and the country) since none of the men who are butchering or the filmmaker herself actually live near the homestead; wealth and access to material goods (what do these material goods mean as the BMW makes its way towards the homestead, past rural schools, small *rondavel*s or local huts, people walking along the side of the road — women carrying babies on their backs in the traditional style and baskets and other goods on their heads?); and the ritual slaughter and butchering of the sheep as part of tradition and patriarchal culture. As noted above, we learn that the sheep brains are kept aside for boys and men to eat, but we also learn in the back and forth "Q and A" that there is an officially designated term, *ntlabi*, for the person (typically a man) appointed by the family to stab the animal. This happens before the animal is properly slaughtered. Relebohile Moletsane (2011) reminds us of the dangers of idealizing tradition and the past in contemporary South Africa. Speaking of what she describes as cultural nostalgia, she writes: "considerations of the role of culture, particularly traditional cultural practices as one of the drivers of the spiraling rates of HIV infections, remain paramount in the minds of those concerned with efforts aimed at addressing the HIV and AIDS pandemic in South Africa" (p. 39).

I would argue that Nikiwe's cellphone captures data that is typically absent in PVR where participants are given specific prompts such as representing "challenges and solutions to addressing HIV and AIDS," or "feeling safe." Although there is a great deal to be gained from what we have described elsewhere as "digital retreats" with teachers (Mitchell & de Lange, 2013a) who work with designated prompts, we need to be reminded of the impositions of our own pedagogy, and simultaneously, the strength of Nikiwe's strong documentary vision of a community ritual and what it might represent in terms of local culture and as captured through local technology. It is this recognition that is, for me, the activism of this work. In a study that our research team carried out a few years earlier on teachers in the age of AIDS (Higher Education AIDS, 2010), we found that many teachers in deeply rural areas of KwaZulu-Natal, Eastern Cape province and Limpopo identified local beliefs in witchcraft as possibly the greatest barrier to addressing HIV and AIDS and HIV-related stigma. In another study a group of women teachers in a focus group revealed their own beliefs in a discussion of the links between witchcraft and gender violence and HIV (Higher Education AIDS, 2010). However, the issue of traditional beliefs is conspicuously absent from educational discourses of teacher education,

life skills, and the management of HIV and AIDS in schools even though a number of anthropologists and health researchers highlight the significance of local knowledge in addressing HIV and AIDS in relation to such practices as virginity testing (LeClerc-Madlala, 2001; Marcus, 2008; Scorgie, 2006), non medicalized male circumcision (Meissner & Buvo, 2007; Vincent, 2008), and the "sugar daddy" phenomenon (Hunter, 2010). *Village Family Gathering* and its mode of production invite us to reflect anew on the place of local knowledge.

JOSH: This experience and methodology gifted to me by Na Modesta has now become a fundamental part of my doctoral research, which explores how information and communication technologies such as cellphone video can be used as a culturally adaptable means to ensure the transfer and preservation of language and local practices. PVR, when combined with "on hand" local technology such as cellphones and social media, can be an effective and a powerful tool in providing people with a new channel for self-representation, which can create "spaces for diverse experiences, perspectives, and stories to be shared" (Tabodondung, 2010, p. 130). Also PVR methodology as in our experience with *Na Modesta*, demonstrates PVR to be a useful research tool. However, it could be argued that the main objective of participatory video communication is not to produce media materials per se, but to use a process of media production to empower people with the confidence, skills and information they need to tackle their own issues (Shaw & Robertson, 1997). In other words, as a methodology, it emphasizes the process, rather than the final product, through workshops and social interaction while also viewing video or cellphilms as a pretext for engaging community participants, specifically youth. Moreover, participatory video processes are meant to encourage community members to take action and work collectively on local issues, something that was very much our experience working with video and Na Modesta. Such processes can also provide a space for people to discuss issues that are rarely addressed or spoken about out in the open (Lunch & Lunch, 2006). In many ways our goal, as mentioned earlier, was meant to be celebratory and to have a document for future generations.

The screening of our film did undoubtedly create a space for the community to discuss and think of many important issues such as language loss, rapidly changing traditions, and increasing rates of Type 2 diabetes due to non-traditional diet (Schwab-Cartas, 2012). Critical reflection and discussion is undeniably an integral aspect to our project, something that it shares with PVR. At the same time, critical reflection and discussion alone will not ensure the continuity of our Zapotec way of life, and it appears that in PVR this seems to be the final "destination" of the process. Na Modesta taught us that learning through doing and cultural continuity transcend technologies like video or cellphilm, such that they are not ends in themselves, but merely tools in a larger process of learning. In this case, the appropriation of video was used to continue to foster the intergenerational transmission of ancestral knowledge.

In other words, as much as PVR may have in common with our experience, there are also many differences between a PVR approach and a "Na Modesta" approach. What I am referring to is sustaining the workshop element that is an important step in the PVR process but is not the central concern, while in Na Modesta's approach it clearly was. Her approach takes as its central concern the *learning through doing*, or the workshop aspect of engaging its participants in a multisensory and embodied experience, which was sustained so that the embodied moment where theory and practice were collapsed could impress traditional knowledge onto its participants. In essence then, video allows one to explore non-visual forms of knowledge through practice-forms of experience that are not exclusively visual, nor are they "general and abstract, but as embodied in social, cultural and material contexts" (Cazden et al 1996, p. 82), engaging language learning within the lived context in which language acquisition occurs. Furthermore, by perpetuating this workshop element that combined digital technology and the ancestral practice of making *guetabiza*, Na Modesta managed to bridge the generational gap between the filmmakers as Zapotec youth firmly planted in 21st century digital culture and herself, an elder of a previous generation. This work created a space where we could not only learn from one another but also, through sharing a focus on audiovisual documentation of an ancestral practice, come together to understand each other's distinct generational experiences. Na Modesta also taught us that it is not only okay, but critical to fully engage with this new technology because it has become a fundamental part of our world as Zapotec youth, but not at the expense of our own traditions. She also taught us something about activism. In many ways activism in our community is not thought of in dichotomous terms where only a specific individual or group of people are doing something to achieve change or fighting to preserve our traditional way of life. Rather, everyone in our community is trying to fight in different capacities to preserve our Zapotec traditions and knowledge, whether it is an elder passing on a recipe or a child on the street greeting his or her friend in Zapotec. Moreover, the term activism does not encapsulate the length of our struggle; it tends to imply that we just started to campaign or fight for these issues when, in reality, we have been fighting to perpetuate our Zapotec way of life since the Spanish arrived on our shores. Although our collective did not consider this work with Na Modesta as a form of activism, but part of the everyday reality of community life and of trying to find ways to serve our community and perpetuate the continuity of our Zapotec ways of life in this postcolonial world, clearly Na Modesta's observations sparked many questions about what counts as activism in the context of Indigenous communities.

DIGITAL DIALOGUE THROUGH AUDIENCE ENGAGEMENT

But how are the various audiences for the two videos also part of polyvocality in the sense that there is room for many voices, and how can this dialogue

be advanced through the platform of the *McGill Journal of Education / Revue des sciences de l'éducation de McGill* as an online journal and especially in this issue focusing on digital technology and scholarship? Positioning ourselves somewhat on the edge of these stories, as we hint at earlier, and yet aware of their impact on other audiences, we share below some observations about the screenings of these two productions and provide the links to films: *Village Family Gathering*: (http://participatoryculturelab.com/village-family-gathering/) and *Na Modesta* (http://www.youtube.com/watch?v=TFlCQglD1TM). Seizing on (and where possible facilitating) such opportunities, we propose, is central to a scholar activist role.

CLAUDIA: When Nikiwe screens *Village Family Gathering* for the other teachers (the original audience), no one quite knows what it is going to happen, and Nikiwe doesn't mention how long the film actually is. The audience is quiet and at the same time appreciative, especially in relation to Nikiwe's careful filming since the technicalities of cellphilming have been a feature of our workshops. The group bursts into laughter at the end, though, when they see the "butcher" put the sheep's head on his own head. Nikiwe's artfulness works, and the film itself sets off more discussion about the local contexts which participants could film in order to showcase their own social environments. Indeed at one point someone makes the comment that cellphilming should be a compulsory activity for staff members at the beginning of each new school year.

However, it is with some trepidation, or what MacEntee (in press) following Boler and Zembylas (2003) explores as a pedagogy of discomfort that I screen the film outside of rural South Africa and at a conference of poets and arts-based researchers in urban Montreal. This opens up new questions about audience and the ways in the issue of ownership. How will *Village Family Gathering* travel and should we have first consulted Nikiwe about screening the video in Montreal? My colleague Naydene and I worry that the filming of the butchering of a goat will be offensive to the group, although we ourselves see it as a perfect example of Louise Rosenblatt's (1978) work on the idea of the aesthetic response and the "living through" process in relation to the poetic (Mitchell & de Lange, 2013b). Interestingly, though, this urban Montreal audience includes several of our colleagues who are from KwaZulu-Natal. As they join in on the post-screening discussion, they wonder how they should interpret *Village Family Gathering* in this downtown Montreal setting and with an audience of people who know nothing of the setting, even if it is through the use of device that everyone recognizes (the cellphone)? Our worries are perhaps not necessary, and we enjoy the audience's response when they too get caught up in the scene of the butchered goat juxtaposed with the BMWs parked close by.

JOSH: The content of our film, which follows an 83-year-old elder, Na Modesta, making *guetabiza,* in many ways, is nothing out of the ordinary for anyone who is a member of our community. That is to say, in many ways, it depicts a brief snapshot of the everyday and an almost unremarkable activity. Yet this commonplace everyday activity became something rather remarkable when projected on a large screen in front of the community for several reasons. As mentioned earlier, it became a platform for our community to reflect on timely issues such as language loss and the effects of a new diet in the community. Coupled with the act of an elder graciously gifting our community an ancestral recipe passed in her family for generations, it forced people of all ages in our community to re-evaluate their own relationship with our Zapotec practices and compelled people in our community to ask themselves the question, what can be done to secure Zapotec culture for future generations?, In many ways, this film signified for many viewers in our community a celebration of both our resistance (Smith, 1999) and the continuity of our ancestral practices in spite of hundred years of oppression and marginalization. Perhaps most notable was the way the youth in our community responded to the film by asking their parents and elders to teach them more about our traditions and continuing this practice of making short films of these practices as they pertain to their own families. In other words youth are continuing to find ways to make these traditions not only relevant to them in the 21st century, but also exploring ways to use digital / new technology to both preserve and live our traditions.

When I screened our film in Montreal at several invited lectures, the reactions have always been very positive and have evoked a wide range of responses, ranging from simply wanting to know what the dish tasted like, to being surprised to hear that Mexico has a large population of Indigenous nations fighting to preserve their traditions and culture. Critically, it has opened up a dialogue and greater understanding between our Zapotec community and other Indigenous communities / viewers, especially in the Canadian context. More than anything the film is allowing us to not only see the similarities in our historical experiences and traditions in our communities but it also created a platform for us to share our experiences and the work we are doing in our communities in a way where we can support and continue to learn from one another.

CONCLUSIONS

In this article, we have used our experiences of participatory video in two country contexts as a way to offer what we hope is a nuanced understanding of the role of local technologies in local or Indigenous representation. While there are many advantages to using visual methods such as participatory video in social research, there are also problematics ranging from being too celebratory (Lowe, Rose, Salvio & Palacio, 2012), to issues of colonization in insisting on or expecting participation (Milne, 2012), and ownership (Miller & Smith,

2012). To date, however, there has been little discussion on the technology itself and the changing landscape of participatory research in the context of digital and social media, although Willett's (2009) work has been helpful in relation to offering a brief history of participatory video tools in terms of cost and functionality.

The account of Nikiwe's cellphone production of *Village Family Gathering* highlights this. At the same time, as can be seen in the account of the making of *Na Modesta*, perhaps its greatest strength is that it both mines the visual and also highlights that which cannot be visualized such as the transfer of ancestral knowledge only ascertained by physically engaging in the actual everyday practices of food preparation. Na Modesta's story also draws attention to how video and new technologies have not only come to form an important part of the everyday life of Indigenous Zapotec culture but are slowly becoming a fundamental part of how ancestral knowledge, practices, and stories can be transferred to the next generation. In other words, video, new technologies, and social media have already become an integral part of the next generation's Indigenous knowledge system. Our own small role in writing about these productions here is simply one of being "in service of" (Sudbury & Okazawa-Rey, 2009, p. 3) the fact that change is the one constant in history, and as Davis (2009) notes, all societies in all times and in all places constantly adapt to new possibilities for life. This underscores the need to recognize how communities with or without outside intervention are adapting technology for their own goals and for their own self-determination.

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RESEARCHING PHOTOGRAPHIC PARTICIPATORY INQUIRY IN AN E-LEARNING ENVIRONMENT

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ABSTRACT. This article focuses on the use of Photographic Participatory Inquiry (PPI) in researching the teaching and learning of photography in the e-learning environment. It is an arts-informed method drawing on digital tools to capture collective information as digital artefacts, which can then be accessed and harnessed to build critical and reflective photographic practices. The multimedia tools employed (for example GoPro video and screen capture) are critically discussed for their potential to contribute understanding of photographic artistic practice and the learning of a digital generation. The article may also provide critical insights and inform more nuanced methods for research and scholarship when wishing to investigate the personalized, participatory, and productive pedagogies of a networked learning society.

MIEUX COMPRENDRE L'ENQUÊTE PHOTOGRAPHIQUE PARTICIPATIVE DANS UN ENVIRONNEMENT D'APPRENTISSAGE EN LIGNE

RÉSUMÉ. Cet article porte sur l'utilisation, en contexte d'apprentissage en ligne, de la photographie participative comme méthode de recherche dans le domaine de l'enseignement et de l'apprentissage de la photographie. Cette méthode, fondée sur les arts, s'appuie sur l'utilisation d'outils numériques pour recueillir de l'information sous forme d'artéfacts numériques, artéfacts pouvant ensuite être consultés et exploités pour élaborer des pratiques photographiques critiques et réflectives. Les outils multimédia utilisés (par exemple, des vidéos GoPro et des captures d'écran) et leur potentiel à contribuer à une meilleure compréhension des pratiques de photographie artistique et d'apprentissage de la génération numérique sont examinés sous un angle critique. Cet article peut également fournir des perspectives critiques et engendrer des méthodes de recherche plus nuancées pour ceux désirant enquêter les pédagogies personnalisées, participatives et productives d'une société d'apprentissage en réseau.

Students today live in a society that consumes multimedia. In tertiary education, one significant challenge for academics teaching photomedia is how to research and reflect on their own e-learning pedagogies in order to build students' critical reflective practices. This challenge begins with identifying research tools and

methods that can accommodate the personalized, participatory and productive pedagogies of a networked learning society (McLoughlin & Lee, 2008). Under such conditions, the need emerges to build reflexive learning opportunities for both the educator and their students. For the researcher / photographer-educator (hereafter R/P-E), this requires developing research and teaching approaches in e-learning photographic practices that can engage a generation now immersed in visual culture, visual processing and the digital stream, and using apps such as Instagram, Twitter, Facebook and Hipstamatic. Research reports that for many students, including digital photography students, the social function of photographic images has overridden the ability to see the photograph as an object (Garry & Gerrie, 2005; Harrison, 2002; Jones, 2010). Students constantly use the digital image as their primary communication tool, such as sending selfies. Such an orientation to the image reflects the immediate desire for a click-flick action and a return response from the recipient, this over and above any deeper consideration of either the subject matter or the technical and aesthetic intentions being carried by the image. This presents a significant challenge for the educator wishing to build more technical and aesthetic-considered learning in students entering a range of professions where the skills of creating successful digital images are critical.

As a response to this challenge, this article focuses on the use of *Photographic Participatory Inquiry* (PPI) in researching the teaching and learning of digital photographic practice. PPI is an arts-informed method drawing on digital tools to capture collective information in the form of digital artefacts which can then be accessed and harnessed to build critical and reflective photographic practices. Operating in an e-learning studio environment, it focuses on digital photography as a unique representational practice, this in a media world that acknowledges the increasing role of audience and the importance of the digital artist in developing their reflective and co-constructed knowledge through both physical and e-learning interactions. PPI affords opportunities for the R/P-E to rethink their traditional photographic pedagogies and to build a framework for reflexive inquiry (Mockler & Sachs, 2011) better tailored to the e-learning environment. In this environment, students use a range of multimedia tools that comprise software i) for specific photographic image manipulation and production and ii) image capture power to store and retrieve multiple levels of imaging history (including screen capture, video and voice data files).

PPI can also be used as a research method with potential to investigate the quality and experience of e-learning interactions in photographic visualization. The method traverses practice-based research, arts-based inquiry, and the wider educational field of critical or emancipatory approaches to participatory action research (Kemmis, 2001, Kemmis 2006). It draws on visual qualitative research methods (Pink, 2004; Prosser & Schwartz, 1998; Rose, 2007), in particular photo and video elicitation, in recognition of the significance of visual culture in learning and research (Pink, 2007). This article describes the use of these

e-learning tools when using PPI to research photographic digital pedagogies. In particular, it focuses on how the digital tools can build critical and reflective photographic practices. In the final section, the authors consider the strengths and weaknesses of using PPI in researching the teaching and learning of digital photography in an e-learning context.

RESEARCHING DIGITAL PHOTOGRAPHIC PRACTICE

Photographic practice in the artistic digital domain finds the digital photographer concerned with the deep natural, social, cultural, and aesthetic insights captured by light and time, specifically their ability to communicate these flickering moments with clarity to an audience. Photographic practice is understood as the digital artist's intentional actions to capture images via the camera to bricolage the material world, light and time, and social and cultural experiences informed by past memories and present actions.

This research orients itself around the two key visual cognitive activities identified in the traditional photographic techniques of pre- (before the image is taken by the camera) and post- visualization (the processes of image manipulation for the taken image) (Adams, 1934; Uelsmann, 2002), as these apply to digital photography. What is currently known about the visual practices of digital photographic students is that digital software provides powerful post-visualization tools. However, these post-visualization tools are generally being approached on a superficial level with students developing a "we can fix it in Photoshop" predisposition. The craft of the camera, or indeed its functional and technical capacities (as in the pre-visualization act), now takes a secondary focus for the digital generation. The photographic educator is constantly presented with naively gathered or ill-conceived images and observes the student struggling with the reality of being unable to digitally manipulate a failed image. However, in the contemporary multi-literacies learning environment (Cope & Kalantzis, 2000), the camera lens and the computer are now bound in such a way that, for the student photographer, all images and their social and cultural context override the more traditional function of the image as an object of contemplation. This phenomenon requires a reconsideration of the appropriateness of traditional photographic teaching and learning practices used in tertiary education, and asks instead, what are the potential pedagogical benefits of the new e-learning and communicating environment? The research will seek to gather information about students' cognitive, affective, and performative practices used in both traditional and digital photography.

DIGITAL PHOTOGRAPHIC PRACTICE INFORMED BY ARTS-BASED INQUIRY

PPI in digital photographic practice is informed by arts-based inquiry (Finley, 2008), arts-informed research (Barone & Eisner, 2012), and art practice as research inquiry in visual arts (Sullivan, 2005). An aim of PPI is to make

academic thinking and social theory practice in digital photographic practice more accessible to individuals outside the academy (Rees, 2010). In the generation of meanings and the investigation of aesthetic choices (Bresler, 2006) when making images, PPI focuses on the connections between aesthetic spaces that emerge in the dialogical encounters between student, teacher and other audiences. Using arts-based inquiry, the student / photographer / artist is guided to employ levels of aesthetic, conceptual and reflective inquiry in order to build visual and verbal narratives about their own photographic practice. They create, describe, and reflect on their cognitive and expressive processes and, in turn, communicate their own learning to an audience or to the educator. The R/P-E, using PPI, then examines the documented photographic art practices of the students. These include the products of artistic inquiry; reflective insights of the student / photographer / artist and their e-learning journal as process thinking. PPI offers both the students and the R/P-E a method with the potential to explore the generation of aesthetic spaces surrounding the production of digital images through examining their own and others digital photographic practice within an e-teaching and e-learning studio environment.

The collection of the digitally documented photographic practice and the e- learning journal as data sets constitutes the core of the study of PPI. In addition, to enhance validity the R/P-E is able to draw on a wider range of data using multiple data sets, for example survey, video and photo elicitation interview strategies. These sit alongside the co-constructed conversations and reflective writing of the educator and student (Bresler, 2006). The R/P-E is also informed by their own artistic practice and reflective narratives that must, at all times, be acknowledged as a viewpoint of significance in the research.

PPI affords the student the capacity to build new understandings of contemporary image usage for extended social function, such as in advertising and photojournalism; to offer quick visual communication of events, such as designed Instagram moments or edited selfies; and the ability to develop a set of sophisticated skills for communicating to complex audiences through illustration or exhibition. This set of production and communication skills is fundamental to the integration of digital images into artistic practice (Wright, 1998) and to a wide range of professions who increasingly acknowledge the cognitive role of images in contemporary life (Stafford, 2007).

Questions then emerge about which teaching and learning strategies inform "knowing when doing," both when taking an image with the camera and when working with computer software to manipulate images. In approaching such a learning dilemma, the research questions need to be balanced against the flip side of the beauty of this post-visualization world and the creative potential the computer holds. In this world, you can add to or subtract from an image or create a new world and a new moment of an imagined time, rather than accepting the reality fixed in a pre-visualized frame.

How to develop the students' skills to create digital objects for audience impact or contemplation will require the student to build their own critical and reflective pedagogies. For the R/P-E seeking to improve their students' learning outcomes, they must find methods that harness the potential of an electronically supported teaching and learning platform both as an image creation tool and as a teaching and learning research tool. The digital photographic e-learning environment is now able to capture the cognitive work students do when creating images and can also simultaneously collect multiple forms of digital data that can be analyzed, merged, and interpreted by the R/P-E to build a better picture of how this generation of students approaches their learning. The challenge in researching digital photographic practice is to consider how and what data to gather so that it can accommodate both the personalized, participatory, and productive pedagogies of a networked learning society and inform the R/P-E about the co-construction opportunities that emerge in the studio learning environment (Hetland, 2007). This co-constructed environment is based around a reflection loop with the R/P-E via the e-learning journal, where the student has documented process, their research of industry and artistic trends, their research of technical elements, and the ways they have identified that future projects could be improved based upon reflection of past projects.

The study asks what are the benefits for pedagogical research of i) the new visual multimedia environment with its image, storage, capture, and processing facilities and ii) the image, screen, sound, and video capture computational power of tools such as GoPro and screen capture to provide rich data sources of information for analysis? For example, the GoPro, a video camera worn on the head, captures first person video footage that can be viewed in combination with other images captured by the digital camera in the same time frame. Finally, how can the R/P-E best utilize this data to develop critical and reflective practice within a research-in-action project? This article presents the potential of multimedia data to provide the appropriate research information and processing tools that will enable the R/P-E to answer questions connected with teaching and learning in such an e-learning context.

PPI: DOING AND REFLECTING

In the context of higher education research, PPI has been conceptualized within a multimedia e-learning environment. It draws together the data collected from the arts-based inquiry of student practices and the arts-informed research data located in digital photographic practice as a component of self-reflective participatory action research for the educator (Denzin & Lincoln, 2005; Gallagher & Kim, 2008; McTaggart, 1997; Mockler & Sachs, 2011). It draws specifically on the definition of the critical practitioner action research model by Stephen Kemmis (2008) from social science research into visual photographic

teaching and learning research. The model acknowledges the complexity of co-constructed meanings when reflecting and acting and sees critical practitioner action research as the ability:

> to investigate their shared reality in order to transform it and to transform their reality in order to investigate it, that is, by making changes in what they do and gathering evidence of the observable conduct and historical consequences of their actions for different people and groups involved and affected in terms of the cultural-discursive, social, material-economic and personal character, conduct and consequences of the practice. (p.136)

Such a definition acknowledges the student(s) and educator as co-participants in the exploration of the phenomenon of photographic image creation in the photographic e-learning environment. Attention therefore needs to be given to how meanings merge when data such as video footage from the GoPro camera, images from screen capture tools, digital audio files, and students' arts-based processes in action along with students' critical reflections and artistic intentions are shared by both parties in this e-learning environment. This digital data, as artifacts, carry the image-making process history of the students and their narrating voice, and together they reveal, for both the student and the R/P-E, how interpretive and discursive orientations emerge when reflecting on learning.

PPI could be described as visual participatory inquiry as it embeds a critical-practitioner action research orientation together with reflective arts-inquiry strategies (Butler-Kisber & Poldma, 2010; Finley, 2008). The significant reflective arts-inquiry strategy employed in PPI is the use of the photographic e-learning journal, as it is a self-reflective digital database into which the students can add video data, digital images, digital images in process, critical writing, other commentary and affective responses. PPI and its photographic e-learning journal could also be seen as capturing the intentions of a/r/tography as the student and researcher are the artists, researchers and educators (Irwin & Springgay, 2008). Here, writing about an artwork and making an artwork are not separate but rather are interwoven, both enhancing one another within practice-based research (Irwin, 2008; Irwin & de Cosson, 2004). This tight definition of a/r/tography locks it within arts-based inquiry and practice-based research as evidenced in the e-learning journal (Irwin & Springgay, 2008). The e-learning journal is data rich and allows the image making processes, practices, and reflective words to be retrieved later, reflected upon, adjusted and shared electronically. This data also contains beliefs and opinions, technical notes, artistic ideas, reflections, quotes, poetry (Grauer & Naths, 1998). Most significantly, the opportunity to add digital sound and video files resonates with what Angharad Valdivia (2002) terms an "ethical theory of voice" (p. 435).

PPI as a research method acknowledges the e-learning environment of the digital native and provides a legitimate means of capturing the nature of photographic visualization practices that is dependent on the students' consciousness of their

audiences or client who later views the image and of their own intentions when creating photographic images. Such a consciousness has been termed "interaction aesthetics" (Xenakis & Arnellos, 2013). The e-learning platform can simultaneously capture the images, record the thinking and making processes, as well as identify new learning events as they appear during this image creation phases. In addition, it can provide space for critical reflection resulting from this compilation of information. Images can now be viewed, reviewed, and narrated upon when reflecting. PPI and the photographic e-learning journal can also capture the "in between space" that operates when reflecting on and creating images. The student can now talk about why and how they have captured the image in such a way, and it affords them the opportunity to validate their decisions by comparing multiple digital files. Student thinking when reflecting, undoing, and redoing is now a documented multiple imaging process. At any point in the development process, images can be digitally saved and students can question the technical and interactional aesthetic of their image by comparing digital images in conversation with self and others. Different file sets can be shared and reflective conversations had between peers and the R/P-E. PPI is therefore a powerful tool when seeking to identify the cognitive and liminal moments between old and new ideas that emerge when rendering new image possibilities (Grushka, 2008).

PPI responds to the criticism by Rees (2010) of arts-based inquiry that claims arts-based inquiry is neither art nor research. PPI is active learning (Drew & Mackie, 2011) and synthesizes both critical participatory action research in education and arts-informed research. For the R/P-E, who models their own pedagogies within PPI, attention must be given to the way participatory inquiry opens up mutual communicative spaces for collective reflection and for learning between the teacher and student. Such spaces reveal how arts practices are constructed and evolve over time within socio-cultural contexts.

For the R/P-E and the photographic student, PPI allows collaborative reflection, as together educator and student can pay attention to i) reflection on action, "what am I going to do?"; ii) reflection in action, modifying when working and iii) reflection for action, "how I am going to do it better?" (Grushka, McLeod & Reynolds, 2005). The e-learning tools allow digital photos, digital image processing, video and audio recording devices, and files, in combination with photo and video elicitation methods (Blinn & Harrist, 2011; Harper, 2002) and visual analysis methods (Pink, 2003) to come together. In dialogue, the student and the R/P-E work with images, record reflections and co-construct insights. These methods provide points of connection between the image as object (albeit digital and virtual), the student and their aesthetic choices and the R/P-E, thus opening up conversations about the phenomenon under investigation.

RESEARCHING PHOTOGRAPHIC PRACTICE IN AN E-LEARNING ENVIRONMENT

PPI and its related multimedia tools are used by the authors to research the photographic e-learning tertiary environment, focusing specifically on the doing and reflecting of the digital photographic visualization stages of pre- and post-visualization. To capture the data from these two visualization stages, multimedia tools will be selected and operationalized in three phases: Phase one: GoPro video capture and data analysis; Phase two: screen capture video software as an analysis tool for understanding post-visualization; and Phase three: visual participatory inquiry. In this last phase, the data from phases one and two are combined in the photographic e-learning journal and then collaboratively dialogued using photo and video elicitation interview approaches that can overlay the narrated voices of the student and the R/P-E.

Phase one: GoPro video capture and data analysis

The GoPro, a video camera worn on the head, captures first person video footage of the photographic student as they orientate their camera to their subject matter and prepare to take an image - the pre-shutter position. The GoPro video camera is used in the pre-visualization stage, when the photographer is physically shooting the object or subject matter. This tool takes the image from a position that cannot be afforded by a large video camera, which, in qualitative research, occupies the observer position.

The GoPro first person recorded view is not what the eye is seeing through the viewfinder of the camera but the view through the GoPro lens. This provides a wider perspective to that of the camera lens and can therefore capture the surrounding scene and visual thinking of the photographer (Figure 1). Visual thinking includes consideration of how the object of focus in the image is to be aesthetically represented within the photograph, such as larger or darker. Past experiences of the photographer about how the object has been represented may determine the significance of the subject relative to the entire scene, such as light and related movement occurring outside the image frame. This pre-visualization moment, as the student selects the image prior to taking the photo shot or pressing the shutter, can provide insight for both the student and educator as they reflect on the student's decisions. Was there a better shot missed than the one captured? GoPro footage records and stores all of the physical moves of the photographer prior to taking an image. These movements can later be analyzed and commented on by the student or the R/P-E to reveal reflections about the student's inner conversations prior to taking the photograph.

In Phase One, both the digital camera image(s) and the GoPro video footage will be viewed side by side. This enables the photographer to analyze the student's spatial awareness, framing and the technical decisions being taken. There are a number of reasons why the GoPro camera is an ideal data collection tool:

1. It is very easy to use with relatively little instruction needed.
2. For the post interviews, its wide angle of view offers a wider perspective, capturing more than the eye may have focused on.
3. It records high quality video in a relatively small amount of storage.
4. It is small and relatively unobtrusive.
5. It can easily been worn with a head strap giving the eye's perspective.
6. It is robust and relatively low cost.

FIGURE 1. *GoPro footage from eye-level of the photographer*

One of the key reasons for conducting a post analysis of pre-visualization is that most people cannot practice their art form and give a verbal commentary at the same time. Thus footage will be used to trigger memories of the events where the students felt they were successful, where there was frustration, and where they believed they could have seen different images to those captured. The video data can also be replayed multiple times in the analysis of possible affective and cognitive decisions taken by the student. More significantly, these can be later overlaid with the post-visualization data to better inform the complexity of the decisions that need to be made in the construction of a photographic image.

The pre-visualization process encompasses all the affective and cognitive work that occurs pre-shutter. Once the shutter is pressed and the image is captured, we move on to the second phase, which is post-shutter or post-visualization, where the photographer is sitting in front of the computer and editing the images from the shoot. In this phase, screen capture tools work to collect the history of how images are selected and edited, and image iterations and manipulations are recorded with screen capture software via QuickTime. Both of these stages are crucial to the production of effective imagery. Without effective application of the aesthetic and technical aspects of the camera and the light related to the object of focus in the pre-visualization stage, the benefits

of digital manipulation tools cannot be harnessed. The initial limitations of a poor photograph cannot be improved by computer manipulations.

Phase two: Screen capture video software as an analysis tool for understanding post-visualization

The second phase, post-visualization, uses screen capture software to record the image thinking or cognitive processes as the student creates their photograph. Screen capture is built into QuickTime and records everything occurring on the screen (see Figure 2). Thus the process from downloading the imagery, editing and final selection of the image can be recorded. This thinking includes the selection of the captured image, followed by editing the image, and/or re-visualizing the photographic image. The image in this phase has moved from the "mind's eye" to digital capture and then to the computer, where it is processed and manipulated to assume physical and tangible reality based on pixels, ready for online delivery or print.

FIGURE 2. *Screen capture of the editing process*

As seen in Figure 2, the editing processes that have been used are readily identifiable. The whole screen can be viewed, making it easy to examine how the student has used the tool palette. Another software app used in conjunction with screen capture video software is PinPoint, which enables a visual display of the keyboard short cuts that are being used by the student in the screencast recording. This feature supports the researcher and student in the analysis and discussion of keyboard actions and mouse interactions on the screen, which can contribute to the reflective process when editing.

Both the student and the R/P-E, together or independently, can access the stored creation history of the photograph using the screen capture tools for

strategic analysis. The student and the R/P-E can ask: Do I crop the image? What changes have I made to the hue, exposure or contrast? How effective has been the use of multiple images in the construction of the photograph? In collaboration, they can make different choices and decide to rework the selection of images or alter the editing process. The selecting and processing of the imagery can take just as much time and practice as the technical and interaction aesthetics composition considerations that occur in the pre-visualization stage. Interaction aesthetics focus on the perceived factors that may impact on the decoding of the photographic imagery by the audience or client who later views the image. The photographer needs to be aware of the relationship between themselves as the artist, the world in which they are producing work, and the audience that is engaging with their photomedia imagery. This second phase can also be the most frustrating and time-wasting for the student if they do not develop a clear understanding of which visual methods, subject matter, and processes are more effective for each client group. Analyzing and reflecting on past processes and decisions can therefore be vital to developing effective photographic processes and refining individual aesthetic solutions. This reflection process can be captured in the photographic e-learning journal which enables the student to use all forms of media from their photos, video footage from GoPro, screen capture, voice recorded video, as well as traditional written text. Once the visual data is captured during the pre- and post-visualization, this data, along with the photographic e-learning journal, can now be harnessed and applied with photo and video elicitation research methods within PPI.

Phase three: PPI – Photo and video elicitation interview

For the researcher PPI is applied in the final phase where the student's participatory voice through photo and video elicitation interviews is juxtaposed with the student's screen capture, their photographic e-learning journal and visual data connected on their image. As the project will use first person data, it aligns with the photo-voice approach originally developed as a participatory action research method, where individuals photograph their everyday actions. This approach responds to previous criticism about photo elicitation methods. Pink (2004) claims that research needs to reduce the detachment between the researcher and the object of study and between the interpretive representations and the validity of the research findings. Visual methodologies using first person data can provide a way for higher degree photographic students to provide their expert dialogue with the researcher about their experiences (Gallagher & Kim, 2008; Thomson, 2008). This phase prompts analysis and interpretation as a two-way process or dialogue between the R/P-E and the critically reflecting student.

PPI uses questioning based around the photographic experience from a technical and an interaction aesthetic level. To recap, the reflective process of the student

occurs in two phases. First, the student is exposed to hands-on processes of learning in the photographic studio and e-learning environments, where they explore techniques. Secondly, the student reflects through the creation of an e-learning journal that documents research, experimentation and concept development. This e-learning journal becomes the hub for processing and improving work through reflection. Phase 3 will seek to analyze the meanings associated with the envisaging and the construction and editing phases of photographic image production.

Data from the pre-visualization / pre-shutter and post-visualization / post-shutter processes are entered into a timeline in video editing software with juxtaposed images and video. The student is provided with the opportunity to organize their files on the timeline to create a synthesized self-narrative. Led by the R/P-E, the photo and video elicitation conversations would explore the image capture processes, the selection of images for editing and the processes developed by the student. All of these production conversations between the student and the R/P-E are linked to the student's personal intentions and how they are considering these in relation to their audience along the production timeline. Various layers of reflection will be drawn upon in the conversation interview. These include how:

- the combined GoPro footage and the photographic images synced as a multilayered narrative to enable reflection both from the eye level view and the lens view;
- the post-visualization recorded by screen capture software and the photographic e-learning journal combined and used for self-reflective analysis in relation to selecting and editing images; and
- reflection on the final collection of completed computer manipulated photographic images as a body of work.

This timeline work enables the student and R/P-E to begin to construct a new narrated critical and reflective conversation about what has taken place. To support participatory inquiry and discovery about the quality and intentions of the photographic work the interview process does not need to be rigidly structured or scripted using terms that will elicit certain responses. Rather the questions are open and fluid allowing the student to enter into the above-mentioned layers of analysis to extend their learning. Thus the photo and video elicitation interview approach in PPI generates a newly co-constructed narrative about making photographic images. Together in analytical conversation, the student and researcher build a verbal description of the processes used and the effectiveness of the digital image.

DISCUSSION: OPPORTUNITIES AND LIMITATIONS OF PPI METHOD

PPI could be described as a pedagogical method and a research site. Contextualized in an e-learning environment, it is able to capture both reflective learning and its products simultaneously for the student and the R/P-E. More importantly, the technologies build a range of aesthetic representations. Together the student, and the R/P-Es perform an arts-based inquiry within the relationships between the captured images, conversations, creative manipulation, writing, and reflections. More importantly, these can subsequently form the basis of new strategies for the student while the R/P-E can refine their teaching strategies.

In addition, PPI embeds digital e-journaling as a method already used in research (Butler-Kisber & Poldma, 2010) but within a more aesthetic and reflexive encounter. Visual and e-learning journals enable the student to engage in lived research and to develop an embodied and relational understanding between self and other (Jevic & Springgay, 2008). As such, the digital e-learning journal can capture the spaces between the original image, the dialogues between self and others, the aesthetic choices, and the articulation of their interactional aesthetic intent by the overlaying of the critical and embodied writing about the digital image and its production. Together they are captured and interwoven in this e-learning virtual space enhancing one another (Irwin & de Cosson, 2004).

PPI offers the student a means by which to research their own photographic practice-based research and the R/P-E, in collaboration with the student, is able to research through arts-based methods, the e-learning photographic teaching and learning processes. The co-constructed and dialogical nature of this inquiry, which focuses on taking time to analyze the production process, the editing process, and the critical reflective process for the student, is presented as facilitating the refinement of the student's photographic practice, the curriculum, and the teaching and learning strategies of the R/P-E. These methods provide points of connection between the image as object, the student and their aesthetic choices, and the R/P-E. This data-rich e-learning site opens up the next space of research between curriculum and pedagogy for those seeking to explore the dialogical and participatory space of this new learning environment.

The images and actions as data captured using GoPro and screen capture video footage are increasingly gaining popularity in research as they can be used without learning interruption, particularly within the education arena (Patton, 2002). They can support the collection of data in chronological order while capturing learning processes. GoPro and screen capture software features can also provide students with an appealing set of digital devices that can support meta-cognitive and reflective development in their own photographic visualization practices. In addition, unlike traditional photo-voice approaches that focus mainly on post-descriptive, persona, and affective reflective responses

to images, PPI allows spaces for the technical or interactional aesthetics areas of the photography to be examined in a reflective and looped manner during the making, editing, and reflective processes.

The limitations of photo and video–elicitation within PPI are i) it is a relatively time-consuming activity (for the researcher and interviewee) and this may present as a key factor when using this method; ii) as a first person analysis tool in the process of the creation of photographic images, it may also focus on the student's intentions and technical skill development over the communicative impact of the image itself. Remaining in the first person position does not offer the opportunity for the student to step back from the subject position to allow for an objective observer stance or a more critical assessment of the possible meanings that could be generated by an audience. This creates an initial problem for the R/P-E aiming to ensure plausibility and believability (Prosser, 1998), for instance, about their interpretation of student intentions during their learning processes. As the R/P-E is always positioned as the audience, care must be taken to check for ambiguity of image meanings between the R/P-E and the student. It is essential to be able to explore all interpretive meanings (Prosser, 1998) and accept multiple and complex possibilities of meaning. This requires the R/P-E to develop a level of trust and agreement during the interactions between the interviewer and the student as they negotiate these meanings. It also requires the students to be open to the critical and interpretive voices of their peers and the R/P-E. However, it would appear that the opportunities and potential outweigh such concerns. The photographic e-learning journal together with photo and video- elicitation is able to generate a conversation that can overlay the technical processes and working images with reflective insights as they occur in chronological order. Such an approach increases the validation of the interpretive insights of the R/P-E and the student as it does not simply rely on memory recall but draws on detailed research and process information behind the creation of the image. The overlaying of narrative together with the e-learning journal may also capture the feelings and explicit intentions of the student photographer. The cognitive processes of description and analysis can further be elaborated in negotiation with the R/P-E.

Collier's classic assessment of photo-interviews found that while pictures elicited longer and more comprehensive interviews, they also helped subjects overcome repetition found in conventional interviews (Collier & Collier, 1986). Through focused semi-structured interviews, photo-elicitation can limit repetition and potential sidetracking of conversations. However, the R/P-E will need to focus on an analytical dialogue about the learning and the interactional aesthetic considerations. It is anticipated that this would result in a more complex critical engagement about elements such as artist intention, audience impact, attractiveness, satisfaction, sense of balance, harmony, sense of control, fun, and truthfulness within the construction of an image. A major weakness in the teaching and learning of contemporary photography is the lack of scrutiny

over the selection and fallibility of the images taken by the student. Therefore care needs to be taken when entering this photographic personal learning space of the student. The PPI process does, however, have the potential to engage the students in ways that utilize a range of multimedia tools familiar to the digital native. It supports them to develop learning stories that can embed their critical reflections and build knowledge of their own thinking and creating for meaning, beyond the idea of an image that is to be clicked and flicked.

Drawing on visual methods in qualitative research (Pink, 2004, 2007; Prosser & Schwartz, 1998; Rose, 2007), the multimedia devices used in PPI are presented as having the capacity to both overlay and juxtapose images and voices in new ways. Students can view their initial captured images, talk about their initial thinking prior to taking a photograph, and view this set of information next to the key image creation moments captured during the manipulation of the photograph in the computer. It also offers opportunities for experimentation that could be concurrently explored. The student is able to work on two or more images at once, and all of these images can be reflected upon for personal affective intentions, technical processes and interactional aesthetic decisions. The photographic e-learning journal environment is able to capture the complete journey of the photograph, the reflective journal thinking of the student, and how this thinking has been modified during the reflective creative process and post image creation. It is anticipated that with careful phasing of the processes within the e-learning environment, the R-P-E will be able to build new co-constructed conversations that will benefit both the educator and the student. This may become the strength of PPI as together with the R/P-E, the student can negotiate meanings and technical strengths as a major point of the analysis and interpretive consensus, and plan for future outcomes for both the student and the R/P-E.

Thus, PPI presents as having dual outcomes: Firstly, the data collected informs the self-reflective pedagogy of the inner and social conversations of the image maker (Catterall, 2005, pp. 3–4). Secondly, it provides valuable insights for the educator as researcher about the teaching and learning environment they create. Kemmis (2001) argues for integration between "university educational research and practitioner research" because "it is essential to the well-being of educational research itself" (p. 15). Photographic participatory inquiry is able to accommodate this integration space as it positions the actions, images, and words of the students as central to the inquiry. PPI lies within arts-based inquiry and art practice, such that its e-learning products are able to capture what Irwin (2008) describes as a living performance through engagement with their artistic practice.

CONCLUSION

At this point in time, there is a paucity of research into digital photographic teaching and learning in the tertiary educational setting. PPI is a form of inquiry that directly addresses learners and learning in a digital environment. It builds on the three separate ideas that students are digital natives, that they have had different experiences in photography and work, and that they learn differently. Digital multimedia tools may be used to extend current research methods, and such methods can, in turn, offer insights into teaching and learning photographic practices. Used in teaching, participatory inquiry that draws on multimedia offers ways to support the analysis of imaginative and cognitive processes. In particular, PPI may be described as "research as pedagogy" where empirical data is generated and applied in the course of investigating how students learn digital photography in an authentic teaching context. Multimedia tools are used to build a record for both student and teacher. The rich digital data sources can be used in visual analysis to i) explore student behaviors in pre- and post-visualization photographic work; ii) record image creation pathways to capture student imaginative and cognitive processes; iii) access participatory voice in photographic visualization and practice; and iv) employ multimedia in an arts-based inquiry approach to mediate direct experience and build potential for reflexivity in the digital environment. The multimedia tools presented in this article and framed as a research pedagogy draw on arts-based research practices that are able to reveal both the technical and the aesthetic within the meaning-making processes of the photographic e-learning environment. These may be critical for the improvement of e-learning strategies and offer more nuanced methods for research and scholarship when investigating the quality of pedagogical interactions in photographic visualization practices.

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BECOMING TEACHERS' LITTLE EPICS: WHAT DIGITAL STORYTELLING MIGHT REVEAL

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ABSTRACT. This paper discusses pre-service teachers' use of multi-modal tools to produce three-minute films in light of critical moments in their teaching practice. Two cases are considered; each centers on a film, a "little epic" that was produced by a future teacher who attempts to work within an anti-racist framework for social justice. Findings point to how multimodal tools are effective for engaging meaningfully with unresolved conflicts. However, in the face of trauma experienced, the future teachers' efforts to work within a social justice framework may be pushed to the margins. This pedagogy / research sheds light on the workings of the inner landscape of becoming teachers, and highlights the dynamic of education as a psychic crisis compounded by the demands of the social.

PETITES AVENTURES D'ENSEIGNANTS EN DEVENIR: CE QUE LES RÉCITS NUMÉRIQUES PEUVENT RÉVÉLER

RÉSUMÉ. Cet article s'intéresse à l'utilisation, par des enseignants en formation, d'une combinaison d'outils pour produire des films d'une durée de trois minutes, films mettant en lumière des moments charnières dans leur pratique enseignante. Deux cas sont examinés et chacun portent sur un film, un court récit réalisé par un futur enseignant tentant de travailler dans un contexte antiraciste et de justice sociale. Les résultats indiquent que des outils de type multimodal sont efficaces pour s'engager de manière signifiante dans une situation de conflits non résolus. Cependant, considérant les traumatismes vécus, les efforts des futurs enseignants pour œuvrer au sein d'un cadre de justice sociale ont peut-être atteints leurs limites. Cette pédagogie / recherche apporte un éclairage sur les mécanismes en action dans les pensées de l'enseignant en devenir et souligne le rôle de la dynamique éducationnelle comme crise psychique aggravée par les demandes sociales.

I'm sure of one thing: and one thing only.
Whatever I see, whomever I meet,
In the end, I'll make sure that I'll still be me.

Inspired by Dr. Seuss's *Oh, the Places You'll Go,* the above passage is voiced in a digital story of a student who just completed a thirteen-week practicum in the certifying year of a concurrent teacher education program. By layering image and sound, this storyteller takes "new risks" and thinks through the work of teaching, illustrating the kind of fantasy or daydream that Britzman (1998) called a "little epic" (p. 32). While Britzman lamented that such unsanctioned play with ideas, which possesses immense "psychical value," is shut out of the business of learning to teach, we have found that digital storytelling invites such play, particularly when the films are prompted by critical moments experienced in the practicum.

VIDEO CLIP 1. "*I'll make sure that I'll still be me*" (click to activate).

In Video Clip 1, the becoming teacher turns the lens on herself, as she considers "Who will I be?" following what she describes as a student's "preposterous racist" response to a graphic novel about the Holocaust she sought to use in class. The clip is taken from her digital story entitled Shapes of Me. The ethicality of institutional and organizational uses of digital storytelling has been the focus of recent debate (Dush, 2013; Poletti, 2011; Vivenne & Burgess, 2013). However, our purpose with this text is to make explicit the ways that multimodal forms of representation allow us, as teacher educators, to address a particular ethical question: What should our response be to becoming teachers' moments of pain that linger following their practicum? Notably, the literature on digital storytelling raises ethical questions related to asking participants to return to experiences of vulnerability (Dush, 2013). Further, as Salvio (2007) has noted, "the ordinary fears and anxieties that face teachers and students recede further and further into the background discussion in

education" (p. 7). With our work in digital storytelling, we seek to foreground these apprehensions, believing it would be unethical to not address them. Such autobiographical work, as Grumet noted, addresses the "complexity of teaching, the way it is rooted in personal and social history, the way it gathers up our hopes and relentlessly requires us to play out the compelling issues of our lives" (Grumet in Salvio, 2010, p. x). We have found that digital storytelling of critical moments is particularly effective for such engagements (Aitken & Radford, 2012; in press); working with multimedia tools and multiple layers over a period of time, the filmmakers may excavate the remains of what they have experienced and have chosen to symbolize.

In the literature on digital storytelling with teachers, we have noted that there is increased enthusiasm in taking up forms of filmmaking as a new guise for the familiar practice of self-driven reflection (Long, 2011; Tendero, 2006) or as a new means of representing performances linked to regulatory frameworks (Barrett, 2008; Kearney, 2009; Kerin, 2009). We seek to interrupt these practices by using digital storytelling to attend to unconscious knowledge, which Taubman (2012) described as disavowed in education.

While unconscious processes have been explored in digital storytelling in community-based settings (see Brushwood-Rose, 2009; Brushwood-Rose & Granger, 2012), there is no documentation in the literature on film use in teacher education of the ambivalences, contradictions, and unconscious processes. In our work we invite beginning teachers — who are faced with the struggle of negotiating the psychic and social demands of the practicum — to use narration and layers of image and sound to work through what they have experienced and identify as uncomfortable or critical (Aitken & Radford, 2012) (see Figure 1).

For the becoming teachers with whom we work, critical moments have included facing sudden and unexpected displays of racist behavior or hatred for others, experiencing the fear of being unable to respond to the needs of vulnerable children or being repelled by students, or their families or their home lives. Some becoming teachers have written about accusations of racism or concerns that surround students not caring about what they thought or said. Or they venture into anxieties over the subject content of lessons and approaches to teaching and learning to which they are expected to subscribe in their practicum schools. While these all point to how they begin to acquire an understanding of themselves as teachers, most of these experiences are not considered in any depth within official training practices or discourses, nor is the relationship of the psychic to the social generally taken into account around such events of emotional significance. The latter is central to our interpretive lens.

FIGURE 1. *Video-still from the case introduced above, which was layered with the spoken text, "But am I one individual with only one identity?"*

With this contribution to the special issue of the MJE on multimedia in / as scholarship, we present findings of an inquiry that has looked at what digital filmmaking of complex and often contradictory experiences offers pre-service teachers. The research was carried out in a School of Education with three cohorts over three years. We illustrate how our use of digital storytelling with our students has helped us to address what Britzman (2003) underlined in her seminal text, *Practice Makes Practice*: education is a form of crisis shaped by conflicted histories, one's own schooling, fantasies of the self and others, and pervasive cultural myths of teaching, which problematically propose that, "everything depends upon the teacher, teachers are self-made, and teachers are experts" (p. 7). More importantly, this work with multi-modal representations and associated artifacts — what we call the aesthetic archive — has led us to consider the workings of the inner landscapes of becoming teachers who are facing the symbolization of what seems unspeakable. That is, in creating spaces for becoming teachers to use multimedia tools, their "little epics" emerge as they come face to face with what remains largely unaddressed in education: "the isolation of teachers, the dependency and vulnerability teaching accrues, and the problems of knowledge teachers are supposed to possess" (Britzman, 2003, p. 6).

More than a decade has passed since Britzman's original 1991 edition of *Practice Makes Practice* was revised; yet, the notion of education as psychic crisis remains largely unacknowledged (Brown, Atkinson & England, 2006; Taub-

man, 2012). In lieu of this recognition, there has been increasing regulation in the world of education in the last decade: an expansion of politically and economically-driven reforms and expectations of adherence to rigorous professional standards (Britzman, 2006; Brown et al, 2006; Pinar, 2011; Taubman, 2012; Young & Boyd, 2010). In this context, our digital storytelling assignment intersects with what is largely shut out of the popular discourse of teaching: challenges to the cultural myths of teaching and explicit attention to feelings of loss and failure (see Figure 2).

FIGURE 2: *Video-still layered with the spoken text, "Later that night I asked myself questions about my own teaching"*

In our practice, we have been deeply attentive to what Poletti (2011) called "the issues of power attendant in institutional environments" (p. 81). A number of researchers point to how many digital storytelling projects attempt to coax a specific type of story from the participants for specific post-production purposes (McWilliams, 2009; Poletti, 2011; Dush, 2013). In contrast, we are interested in what emerges for the becoming teachers in the process of narrativizing and visually representing an uncomfortable or critical moment.

CONSIDERING THE CRITICAL IN PEDAGOGY AND RESEARCH

This article focuses on the aesthetic archives of two becoming teachers who wanted to work pedagogically within a social justice framework. The two examples allow us to consider the dynamic of aggression that takes place around

learning experiences through which social and cultural beliefs are challenged and critiqued. As Britzman (1998) contended,

> while antiracist pedagogies have been astute in analyzing the structures of inequality, the reliance upon cognitive content as a corrective to affective dynamics can neither imagine the affective force of narcissism of minor differences nor consider why tolerance of inequality is so pervasive. (p. 11)

We seek to work with becoming teachers around a range of affective dynamics provoked by anger, powerlessness, and guilt. Pedagogically, and through our research, we seek to uncover what symbolizing these affective dynamics can mean to education.

The movie-making project is located in a seventy-two hour interdisciplinary course taken by all pre-service teachers who are in the final year of a concurrent education program. Over the course of the project, students select and discuss critical incidents in their teaching, respond to viewing experiences, work with different aesthetic elements in filmmaking, and engage in public viewing and responding. In the evolution of this pedagogy, we have taken into account research on critical incidents in teaching (Korthagen & Vasalos, 2005), a *currere* approach (Pinar, 2004), and curriculum theorizing (Yates & Grumet, 2011). We introduce our students to the significance of the unconscious through readings and discussion of the nature of subjectivity and theories of identity.

We also make use of Robertson's (2004) "Screenplay Pedagogy," as it calls on viewers to take note of and work with deeply felt emotional or somatic moments experienced during the screening of a film; these moments signal the unconscious at work. Robertson, who has worked with transferential provocations in the teacher education classroom, wrote, "having viewers represent, discuss and revisit screen experiences can function as a form of digestion, as they learn to become attentive to meaning making, participants learn to think more analytically about those processes" (p. 5). As both a research methodology and pedagogy, Screenplay supports viewers as they think about their identifications, resistances, and exhilarations. Equally, it creates a context for discussing one's meaning making processes with others. In this paper, we are interested in meaning making around affective dynamics that arise with attempts at using anti-racist pedagogies. We argue that through these different elements of the digital storytelling project, the students are immersed in the backward and forward movement, "the working through of one's own unresolved conflicts" (Britzman & Pitt, 1996, p. 117), leading to the possibility that something of significance — both personal and social, with implications for self, other, and for teaching and learning — may take shape.

Practice as research

The digital stories are composed of a script (of approximately 300 words), still images, video, and a sound track. These elements provide data for our inquiry

into the psychic and social uses of digital filmmaking of critical incidents. Additional sources include transcriptions of post-production focus groups, participants' post-screening written reflections, storyboards, and journals. The data were treated as follows: rhetorical analysis of all texts was carried out using interpretive lenses informed by the work of Britzman (2003), Brooks (1992, 1995), Sharp (1937/1988), Simon (2011), and Williams (1998). The multimodal layers of the films were analyzed individually and in relation to each other, given that differing / competing perspectives may be revealed through the non-compositionally linked layers (Brushwood Rose, 2009; Brushwood Rose & Low, 2014).

A framework for probing more deeply

At this point in our study, nearing the end of the third year of our project, we are working with the notion that the digital stories of critical moments perform the affective response to what Simon (2011) called "shocks to thought," which result in "a loss of previously secured meanings and concomitantly a deeply felt set of uncertainties as to how to respond" (p. 434). Through observing spectators' responses at exhibits of difficult knowledge, Simon found the desire for "relatively straightforward" (p. 434) and conclusive thinking, overwhelming negative emotions, or heightened anxiety, such that the trauma of the shock to thought may be repeated. We have come to realize that in the face of critical moments, our students perform resistances that are similar to what Simon described, mentioned above. In such situations, "one's conceptual frameworks, emotional attachments, and conscious and unconscious desires delimit the ability to settle the meaning of past events" (p. 434). Following Simon, we propose that at such points the becoming teachers' "sense of mastery is undone" (p. 434); they are moved to extreme emotionality, which lends itself to a melodramatic narrative.

In popular parlance, melodrama is defined as "a sensational, dramatic piece with exaggerated characters and exciting events intended to appeal to emotions" ("Melodrama," nd) and is usually conceived in negative terms. Film theorist Williams (1998) described it as the presentation of a hero (or heroine) "who is also a victim and whose moral worth is revealed, to the audience and usually to the other characters in the film, in the course of the narrative" (p. 475). While such stories of moral legibility have been maligned as having low cultural value and are overused in mass entertainment, melodrama has undergone a revival of sorts by scholars "who analyzed the imaginative modes in which cultural forms express dominant social and psychological concerns [and who] sensed that the category of the melodramatic needed revival" (Brooks, 1995, p. vii) because of what it might reveal. In the twenty-first-century, melodrama prevails throughout the public sphere, is mobilized as a mode of address in and through multiple spaces and cultural forms (Philbrick, 2003). It is increasingly pervasive in the digital world in reality television, graphic novels, film

adaptations of superheroes, and social media sites that allow for the sharing of such narratives (see eg., http://waltdisneyconfessions.tumblr.com). Williams contended that what is accomplished ideologically with the melodramatic text is the assignation of guilt and innocence.

Like the structure of melodrama, which "works to recognize and regain a lost innocence" (Williams, 1998, p. 61), we have found that the becoming teachers' critical incidents and films appear to be organized along lines of right and wrong. The films make possible a visualization of the hero as victim, and their narrative structure follows a trajectory of the quest for lost innocence, which often emerges from feelings of anger, powerlessness (see Figure 3), and guilt through other's painful histories. As we explore in this article, the digital stories become places where the working through of such thought can take place. Further, captured in digital form, a story of the self can be screened publically, returned to privately, and read and reread, possibly in ways that allow for considering one's inner landscape and the demands of educational discourses. As the filmmaking leads the students to consider this dynamic, the facilitation of this project leads us to consider our own inner landscape in the spaces of teacher education.

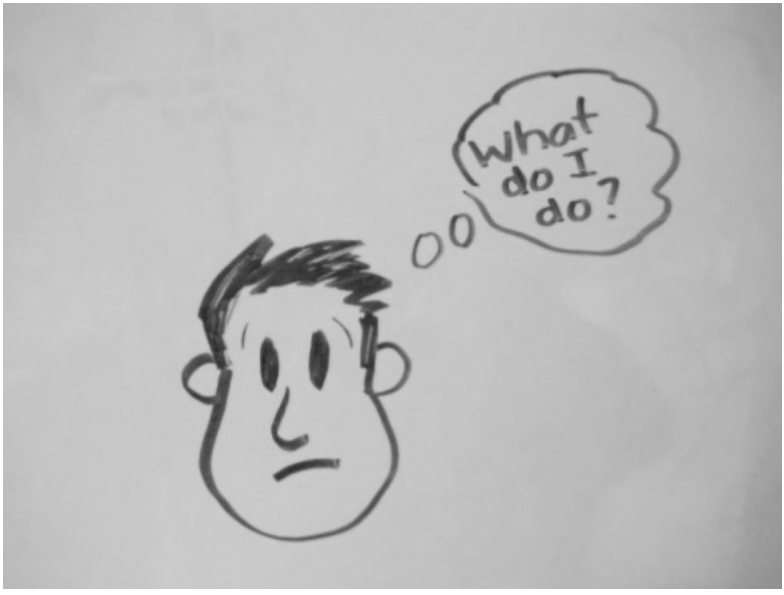

FIGURE 3. *Video-still not accompanied by voice-over*

Our own dreamwork

As the project has unfolded, we have found ourselves considering the risks of such work. We find that the process calls for a type of pedagogical response that seems to exceed the space and time of the course. We attempt to attend

to this in ways that are not, as Britzman (1998) wrote, "curative." That is, we resist "correcting practices and... propping up the practitioners' control and mastery" (p. 32), and we refuse to "valorize the quest for a rationality that can settle the trouble that inaugurates thought" (p. 32). Through these means we seek to work in ways that are emancipatory for ourselves and our students.

While such work moves against the regulatory frameworks of teacher education, we still feel their pull; that is, we find ourselves resisting the desire for control and mastery, shaped by the cultural myths of teaching. Through our ongoing conceptualization, we have held fast to the two following questions: How does the digital film making open a window on the inner landscape? What does it mean for a becoming teacher to contemplate this in a teacher education classroom?

TWO STORIES OF THE UNEXPECTED DYNAMIC OF AFFECT

In what follows, we read how the heroic fantasy of working within an anti-racist framework for social justice becomes difficult to maintain in the face of histories, tensions and conflicts and when the unexpected dynamics of affect emerge. The cases also reveal the possible pedagogical benefit of the digital storytelling. In the recounting of the critical moments, we see that the cultural myths of being a teacher are *writ* large in the students' inner landscapes; reading their own experiences through those myths appears to magnify feelings of failure. However, we argue that the use of the melodramatic structures in the production of the film allows the becoming teachers to tell their stories in a way that supports the reconsolidation of identity, fragmented in the face of the social demands of the practicum. Such demands include working within hierarchical relationships, negotiating a space of potentially competing views of education, building relationships with students, demonstrating recently acquired knowledge around teaching, facing pressure to adopt "best practices" (or those sanctioned by the institution), facing evaluation, and so on.

In the cases shared below, we look at the work of two becoming teachers, both of whom chose not to explicitly represent their critical incidents in film. In the first example, with which we opened this paper, the becoming teacher used the filmmaking to respond to an unexpected display of racism. In the second example, we explore the case of a becoming teacher who is called to account for her own beliefs by an Indigenous student she seeks to help.

Shapes of Me

The future teacher in our first case was assigned a language arts course, despite being a performing arts major. She explained that to overcome feeling "rather uncomfortable at [her] lack of knowledge" of Language Arts teaching, she decided to use a book about the Holocaust that she knows well, *Maus*, a graphic novel by Art Spiegelman (1991). In her post-practicum reflection, she

provides an overview of what happened. In an excerpt from that reflection, the student describes the emotionally charged experience. The thrust of the story is the loss of mastery and an attempt at its restoration, which harkens to Simon's (2011) notion of the type of spectator response that involves a relatively straightforward and conclusive solution:

> I went over the Holocaust and the importance of the event with the class in a series of activities they seemed to like and participated well in, but as we moved on, I realized how most of the class were not engaging with the story because they did not understand the modern connections we would make and had already made before hand. We were working with the Guiding Question,[1] How does war affect and shape relationships? As a class we had a discussion about these modern connections during which a student said: "I don't really care for Jews anyway, so what's the point?" I was very appalled by the blatant racism and the other students either agreed or blatantly rejected this comment. I became very emotional and had to re-think how to react and deal with the situation, adapting my plans for further lessons.

In a follow-up response, we see how the future teacher grapples with overwhelming negative emotions of a similar nature to those Simon (2011) described in relation to difficult knowledge. The anger of the becoming teacher is expressed through her comments. She writes, it is "preposterous that it's getting worse as we're moving toward multicultural education." She mentions that the event has pointed to several issues for her, which she named as: "lack of tolerance from students; lack of awareness; lack of global awareness, and lack of empathy."

These events are not represented in the becoming teacher's movie, *Shapes of Me*; yet, in reading her text using Sharp's (1937/1988) concept of dreamwork, we see the traces of the encounter with anti-Semitism lingering beneath her filmic exploration of questions of nationalism, belonging, and the experience of being an outsider. As Sharp (1937/1988) wrote, "dreams are a means of exploring present day stimuli and current conflicts through the elaboration of preconscious thoughts" (p. 95). In dreaming, Sharp wrote, "a film of moving pictures is projected on the screen of our private inner cinema. This dramatization is done predominantly by visual images" (1937/1988, p. 58). While digital stories are largely elaborated in the conscious realm, some of the same forces that apply in dream formation, such as dramatization, condensation, displacement, symbolization, and secondary elaboration, are evident for the storytellers in the filmmaking process. In this becoming teacher's film we see dreamwork-like condensation, where several themes are combined into one symbol (Sharp, 1937/1988). For example, the film is composed of a series of still shots, the first and last of which are taken along a railroad track, which is significant to her own journey.

As the film begins, the storyteller recalls being asked what she wanted to be when she grew up. While she is speaking, she has shifted seamlessly from French to English and picking up the rhythm of the Dr. Seuss story, she says,

"I found the answer to be just as simple as can be, I just want to be me." Against a childhood photo of the filmmaker, we hear her say, "but being me is not as simple as can be; it's much more complicated." The image fades out and we see the words, "The unexpected." The voice over continues, "wait a minute. It's not what I signed up for. It's not for me." Like the moment of rupture in the classroom, the "unexpected" is not what this future teacher had "signed up for."

The storyline shifts at this point to reveal the difficult work of "making sense of both personal and historical crisis" (Britzman, 2003, p. 9). The backdrop of photos shows friends, family, or classmates from over the years, smiling widely. However, the voice-over conveys the painfulness of having to question where you "fit" as well as the fears associated with the idea that people may be against you simply because of your ethnicity or culture. The filmmaker explains, "you are one, or the other." She describes hiding a part of the self to fit in as an adolescent, and the subsequent and recent revelation that the lines are still drawn between perceived different groups, even at university, where she is once more "the other."

As we near the end of the film, there is a shift in the storyline as the filmmaker picks up the rhythm of Dr. Seuss once more. In her return to the book, *Oh, the Places You'll Go*, which has become famous for being the ideal send-off of a child into the world, we see a means to begin again. She says, "now as a teacher, who will I be? I know I'll be shaped by many things; the things that I do, the places I see. But most of all, I will be shaped by the people I meet. The real impact in education is the human experience and it can only be achieved through integrity" (See Video Clip 2).

NOTE. Background music: "I slept with Bonhomme at the CBC" (Broken Social Scene, 2001, track 1).

VIDEO CLIP 2. *The becoming teacher's words, final section, layered with still photos and soundtrack* (click to activate).

The last line, which is somewhat discordant as it has lost the Seuss-like rhythm, hearkens unmistakably to the cultural myths of teaching. As Britzman (2003) explained, these myths "situate the teacher's individuality as the problem and proffer a static solution of authority, control, mastery, and certainty as the proper position. They seem to explain competency as the absence of conflict" (p. 7).

In fact, the final images of the film capture this absence. It closes with an image of a sun-filled sky, a close-up of a flower in bloom, and finally, a brightly smiling filmmaker standing on the railroad tracks facing the camera. In this closing sequence, the voice over takes us back to the initial question posed to her as a small child. The final lines of her written script submission, with which we began this article with, read:

> One person, one identity?
> Oh, I'm sure of one thing: and one thing only.
> Whatever I see, whomever I meet,
> In the end, I'll make sure that I'll still be me.

This affirmation of the self is a sharp contrast to the becoming teachers' earlier expression of overwhelming negative emotions in the face of her anger over the racist incident (Simon, 2011), which she chose not to represent. We argue that through the dreamwork of the digital story — using the structures of melodrama — the becoming teacher has made an enormous achievement of symbolization. With the critical moment, innocence is first registered. The pathos and action of the narrative suggest the filmmaker's return to the space of innocence. Through this symbolization and the use of the Dr. Seuss text, she takes on the experience of being "othered," bringing the cultural myth of integrity into relief. She tells us through her autobiography, and even shows us in images, that she is on a journey and it is ongoing; she has affirmed her moral worth (Williams, 1998) and, heroically, is ready to set out again (see Figure 4). This is what Brooks (1992) would call a "fully achieved plot" (p. 114).

FIGURE 4. *Video-still of railway tracks from* Shapes of Me

In *Reading for the Plot,* Brooks (1992) provided a thorough examination of the psychic uses of narrative; he writes, "Autobiographical narration must necessarily... show margins outside the narratable, leftover spaces which allow the narrating *I* to objectify and look back at the narrated *I* and to see the plotted middle as shaped by and as shaping its margins" (p. 114). While the becoming teacher's shaping of the narrative reveals a reading of the self against the popular Dr. Seuss story, what exists in the "margins outside the narratable" is the struggle to work with antiracist pedagogies. In producing the digital story, she has found a plot that is *thinkable* and coherent, in contrast to her "preposterous" experience, which was *unthinkable*.

All About My Mother

The second example brings us to a remote First Nation community school. With this case, we take up Britzman's (1998) question: "What then, might come of an antiracist pedagogy unafraid of examining the question of love and the meaning of social bonding, when aggression is admitted as part of its dynamic?" (p. 111). Through the exploration of this dynamic in this story, we consider how the creation of the aesthetic archive may evoke heightened anxiety and the potential of secondary trauma, which, as Simon (2011) wrote, "accompanies feelings of identification with either the victims of violence, the perpetrators of such violence, or those identified as bystanders, passively acquiescent to scenes of brutalization" (p. 433). Faced with a difficult encounter, the becoming teacher identifies with both victim and perpetrator. She attempts to mask her own feelings of being a victim, but appears unable to admit that aggression is part of the dynamic. Perhaps this response emerges given the context where the colonial past has an enduring presence. In a written response to the critical incident, the material and psychic costs of attempting to work transformatively become evident (Britzman, 1998). The becoming teacher explains what has taken place:

> During my first couple of weeks at [the school] my associate teacher had given the students a writing assignment where the students had drawn topics out of a hat and were expected to write a text. One student had drawn the topic of "culture and traditions in your family." She was a strong willed student but she was struggling to write the text. I attempted to prompt her by asking questions about customs and traditions in the community, asking whether there was traditional food or celebrations she could think of. I believe she was attempting to test my confidence and retorted the following, "I don't know where you come from, white devil [*kaamichiskwaaw* = evil woman], but we are not the kind of Indians who put feathers in our hair and dance around at Pow-Wows." I was shocked and very much taken aback. I was not attempting to make her generalize statements about her culture but I understood in the moment that as an outsider I needed to be careful about asking or inquiring about the [student's] culture. I needed to be a listener and not instruct or push the students to share when they are not ready.

The becoming teacher had requested this particular remote placement, which the Practice Teaching Office granted her, given her academic standing and relative maturity.

While she offers a rational description of how she might have acted, her written response to the event underscores the disruption of her dream of teaching, as she recounted asking herself at the time, "Why am I doing this?"

At the start of the focus group discussion, she describes the event as an incident that cannot be shared with others, given the degree of trust that would be required. Through her lowered voice and comments, we see the heightened anxiety about which Simon (2011) wrote. She later goes on to suggest that it cannot be shared at all, as it would reveal problems with the community in which she was placed. This reveals her struggle to frame the story melodramatically, given the blurred lines between who might be the hero.

The becoming teacher chose not to use the film to narrativize the traumatizing event. However, we argue that she uses the different dimensions of the aesthetic archive to perform her affective response. In her film, entitled *All About My Mother*, she describes the foundation of her values as well as the source of what she draws on in education and hopes to embody. The teaching world she captures in her film exists in the indeterminate future rather than what had taken place in her practicum. Unlike the first becoming teacher, who seems to be able to move forward through the mobilization of the melodramatic modes of address, this becoming teacher is unable to name herself as the victim hero, despite drawing on melodramatic structures, such as the quest for lost innocence. Nonetheless, the building of the aesthetic archive — from attempting to recount the incident to the dreamwork of how her mother imbued her with creativity and compassion — brings the expression of lost innocence into sharp relief.

The film, which she describes as "more personal" than her peers' movies, begins with what appears to be an epigraph written on a black backdrop, while we hear the slow picking of a melodic tune on a single acoustic guitar. The epigraph reads, "From each of our pasts emerges a sense of belonging, a sense of truth, and an identity that we must claim as our own. To find our identity, we must reflect on the past." In the next sequences, a feeling of restoration and wholeness is rendered through the images of the filmmaker with one or several family members. The voice-over and images capture the melodramatic return to home; it is a means of finding and restoring innocence, in the face of the burden the critical moment produced (Radford, 2009). We hear, "My family are [*sic*] the pillars on which I stand, the happiness that fills my heart. Wise and knowledgeable, each member contributes something unique to my understanding of what it means to be a lifelong learner." The voice-over continues with references to past generations, oral histories and lessons learned for the future; we hear this as we see photos of family members from the distant past as well as the newest member of the family.

A third of the way into the film, we hear a list of what the storyteller has learned from her father, who is absent from the title, *All About My Mother*. The lessons include respect, love of the outdoors, caring for all dimensions of the self, and the importance of experimentation, creation and discovery. The teaching practices she mentions echo what she had planned, written about, and hoped to carry out in the remote placement.

At two minutes into the three-minute movie, we hear the first explicit mention of teaching, which is once more captured in a lesson from her father. She says, "I learned that to teach something requires patience and humility and might mean that you have to repeat yourself more than a couple of times." Seconds later, an image of her mother appears on the screen, as we hear a list of the lessons she provided: creativity, self-expression, caring, and empathy. Similar to the sequence of photos connected to the earlier voiceover, we see images of nature, art, and people, some of which include the filmmaker, alone or with children. As the film nears the end, we hear, "My mother taught me compassion and empathy, how to care for others, worlds apart from myself. She taught me to how follow my passions and reach for my goals and that my voice is important, even if it feels like no one is listening." The becoming teacher mobilizes the troubling cultural myths of teaching, among which is the notion that "everything depends upon the teacher" (Britzman, 2003, p. 7).

With the final two images of the filmmaker as a teenager and later as an adult, we hear her conclude, "My family has shaped who I am today and the teacher I will become tomorrow. I hope to inspire my students to learn through experimentation, self-expression, and the world around them. I hope they too will become lifelong learners." Like the filmmaker in the first case, who seeks to answer the question, "Who do you want to be?", the becoming teacher provides an almost literal response to the comment of the angry youth of the critical moment, who said, "I don't know where you come from."

In this case, the narrative shows how the filmmaker's youthful inspirations are connected to her future hopes as a teacher. However, in "plotting," the filmmaker makes no explicit mention of the critical moment of having provoked rather than inspired a student. Here we are interested in exploring the boundedness of the narrative of this digital story, or as Brooks (1992) said, the ways it "demarcates, encloses, establishes limits, [and] orders" (p. 4). Both cases of storytelling present a melodramatic return to home for the becoming teachers; this return signals a counterpoint to the teachers' initial recounting of the critical moments of fragmentation, pain and uncertainty suffered at the hands of the students who affronted them in the face of their efforts to work in an anti-racist framework for social justice.

CONSIDERING THE AESTHETIC ARCHIVES

While spaces of aesthetics and affective turns are "typically relegated to irrelevancy, to losing the point, to being off the subject, to wasting time" (Britzman, 1998, p. 33), this work reveals the potential that exists with digital practices and the possibilities for future teachers to better understand the challenges of teaching for change. Even while we see future teachers working within this melodramatic framework that has been criticized for its profound conservatism because it is a "quest, not for the new but for the old space of innocence" (Williams, 1998, p. 65), we maintain that as teacher educators it is our ethical responsibility to attend to the moments of pain experienced in the practicum. We propose that digital storytelling of critical moments validates the future teachers' experiences that are painful and difficult to articulate and provides the possibility of access into their own unconscious struggles. Brooks (1992) reminded us that narrative is "an urgent attempt to cope with the human facts of our existence in body and time" (p. xv). While Brooks argued that literature can illuminate the workings of the mind, we believe that this is also the case for digital storytelling of critical moments. That is, the multimodal tools of digital storytelling may allow the filmmaker access into how one's unconscious is playing out within the arena of the educational context. This is, above all, the dimension that requires further exploration through research and practice.

Within the aesthetic archives, through the use of the imaginative mode of melodrama, the becoming teachers are able to symbolize their psychic experience (Radford, 2008; 2009; 2010). We propose that the melodramatic mode repurposed in their digital stories contributes to processing the fears and anxieties that the critical moments produce. In a culturally prescriptive context where the existential crises of learning are shut out, it is not surprising that the becoming teachers take a melodramatic path. Their stories "expose the insufficiency of viewing teaching from normative standpoints" (Salvio, 2007, p. 6). "In melodrama," wrote Williams (1998), "there is a moral, wish-fulfilling impulse towards the achievement of justice" (p. 48). Moreover, she notes, "melodrama is structured upon the 'dual recognition' of how things are and how they should be" (p. 48). We see the becoming teachers' painful struggles to negotiate the gap between the challenges they encounter and the illusive mastery that the cultural myths of teaching prescribe.

We maintain that the digital traces reveal the value of creating spaces for the little epics. The use of the melodramatic structures allows the becoming teachers to tell their stories in a way that supports the restorative reconsolidation of fragmented identity, assaulted by the social demands of the practicum. Yet, this melodramatic reading of their own story smooths over the messy spaces where psychic, social, and historical forces collide. For the becoming teachers who attempt to work in an anti-racist framework for social justice, it appears that in the face of the depth of their emotionality, and with the failure of "cognitive content as a corrective to affective dynamics" (Britzman,

1998, p. 11), their wishes to attempt these pedagogies are compromised. This troubling observation has propelled us to find ways that will allow our students to attend more explicitly to their inner landscapes. The possibilities of doing so with multimodal storytelling are immense, given its affordances, such as the selection and juxtaposition of non-compositionally linked layers and the opportunity to "read for the plot" (Brooks, 1992). Through the attention to reading practices and production process, the implicit can become more explicit for the becoming teacher. That is, the digital restaging of the traumatic moment becomes a means of remembering, creating the possibility of insight for the becoming teacher into the mutual imbrication of the psychic and the social, and the significance of this to their teaching.

NOTES

1. Traver (1998) described a guiding question as "the fundamental query that directs the search for understanding" (p. 70). The use of such questions aligns with provisions of the Quebec Education Program (Ministère de l'Éducation, du Loisir et du Sport, 2007), which states, "Educating students must include practices that draw on processes of analysis, synthesis and evaluation" (p. 16)

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CRITICAL ASSESSMENT OF VIDEO PRODUCTION IN TEACHER EDUCATION: CAN VIDEO PRODUCTION FOSTER COMMUNITY-ENGAGED SCHOLARSHIP?

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ABSTRACT. In the theoretical framework of production pedagogy, I reflect on a video production project conducted in a teacher education program and discuss the potential of video production to foster community-engaged scholarship among pre-service teachers. While the importance of engaging learners in creating media has been emphasized, studies show little evidence of its pedagogical usefulness. In particular, what learners actually learn through video production remains relatively unknown. In this article, I examine pre-service teachers' reflections on their participation in the video project and argue that, to promote community-engaged scholarship, teacher educators should encourage pre-service teachers to interact with people in their communities in making videos.

ANALYSE CRITIQUE DE LA PRODUCTION DE VIDÉOS DANS UN CADRE DE FORMATION DES ENSEIGNANTS : LA PRODUCTION DE VIDÉOS PEUT-ELLE ENCOURAGER LA RECHERCHE COMMUNAUTAIRE?

RÉSUMÉ. M'arrimant au cadre théorique de la pédagogie de production, j'analyse un projet de production vidéo réalisé au sein d'un programme de formation des enseignants. Je traite également du potentiel de la production vidéo comme agent encourageant la recherche communautaire chez les futurs enseignants. Si l'importance d'impliquer les apprenants dans la création médiatique a été reconnue, les recherches présentent peu d'éléments prouvant sa pertinence pédagogique. Plus particulièrement, ce que les étudiants apprennent via la production vidéo est relativement méconnu. Dans cet article, j'étudie les réflexions qu'ont formulées de futurs enseignants dans le cadre d'un projet de production vidéo et soutiens que pour promouvoir la recherche communautaire, les formateurs doivent encourager les futurs enseignants à interagir avec les membres de leur communauté lors de la réalisation de vidéos.

"To an extent, every technological innovation presents an opportunity to rethink and reimagine a curriculum. Even chalkboards were once a novelty," stated Hammond and Lee (2010, p. 129). Today, digital video offers an opportunity to teach and learn about social phenomena in a way never imagined before. A growing number of teachers use digital video in classrooms in various ways, for instance, by showing video segments for group discussion or prompting learners to create videos for themselves (Bell & Bull, 2010). The importance of engaging learners in video creation is emphasized, especially in the context of K-12 education (Buckingham, 2009a; Norton & Hathaway, 2010). This is supported by the argument that teaching youth to create and share digital video can promote civic engagement among youth (Bennett, Freelon, & Wells, 2010). Despite a growing interest in the use of video production, however, studies show little evidence of its pedagogical usefulness (Benson et al., 2002; Norton & Hathaway, 2010). What learners actually learn through video production, and how video production contributes to their learning, remains relatively unknown. This presents a particular challenge to teacher education because pre-service teachers need to experience the pedagogical usefulness of video production for themselves and also to learn how to implement video production for their future teaching.

Situated in this context, this article provides an assessment of the pedagogical implications of video production in teacher education, in particular, as a way to foster community-engaged scholarship among pre-service teachers. By community-engaged scholarship, I mean the practice of exploring and learning about social phenomena through engagement in communities in social contexts. As I will discuss later, this concept is based on Fletcher and Cambre's (2009) notion of *implicated scholarship*, which emphasizes situating learners in social contexts. My discussion draws on a case study, which examined the experiences of pre-service teachers who created videos in a teacher education course at a major Canadian university. I begin by reviewing the theoretical underpinnings and pedagogical practices of media production in higher education, and then, introduce the case study. After an analysis of the case study, I discuss findings and conclude by suggesting some possible ways to promote community-engaged scholarship through video production in teacher education programs.

MEDIA PRODUCTION, PEDAGOGY, AND SCHOLARSHIP

With the advent of accessible digital media technology, youth are engaged in media more than ever. Video, in particular, is an important part of contemporary culture that enables the "popular representation" of individual or group identities (Buckingham, 2009b, p. 237). The increase in media engagement, however, has not necessarily increased civic engagement among youth (Buckingham, 2006; Jenkins, Purushotma, Weigel, Clinton, & Robison, 2009). This brought to light the significance of critical media literacy with a focus on

alternative media production (Kellner & Share, 2007). Emphasizing "production" in media literacy education, Norton and Hathaway (2010) commented:

> Students cannot become truly media literate — deeply critical consumers of mass media — until they can experience making photographs, planning and organizing ideas through storyboards, writing scripts and performing in front of a camera, designing a web page, and reporting a news story. (p. 146)

The pedagogical implications of media production can be explained through the theory of production pedagogy. Central to this theory is the pedagogical potential of production practice. Drawing on the notion of "exquisite attention" (Lather, 2007, p. 16), De Castell (2010) argued that learners become fully engaged in learning when they pay attention to what they can do while creating something new by using unfamiliar tools available to them. Video production can be one such tool because it requires an unusual combination of aesthetic sensibilities (Eisner, 2002; Thomson, 2008) and a set of audiovisual techniques. My experience supports this idea. Despite the massive quantity of video that saturates contemporary society, as seen on YouTube for example, my interactions with pre-service teachers, at least in North America, suggest that their experiences are generally limited to viewing or consuming videos and that the experience of producing videos is not common. This resonates in the scholarly observations that a relatively small number of people possess the necessary skills to create and distribute videos online and that their videos receive a disproportionally high volume of attention; this unbalance reduces the possible impact that today's new media environment could have on youth civic engagement (Bennett, Freelon, & Wells, 2010). The importance of teaching media production skills has been emphasized to counteract this unmet potential so that all youth can be equipped with the necessary skills to create and share media (Jenkins et al., 2009). The need to incorporate video / media production in teacher education is aligned with this call.

However, the pedagogical outcomes and usefulness of video production in teacher education are little known and even equivocal. Hall and Hudson (2006) incorporated video production in a cross-curricular course to engage pre-service teachers in learning about social justice and diversity issues. They concluded that the course contributed to the pre-service teachers' gaining both video production skills and content knowledge. They decided, however, to discontinue the project because of the high level of stress placed on the pre-service teachers due to making videos. This suggests that the pedagogical reality of video production may be much less than the potential it holds.

The gap between the reality and the potential may be due in part to a lack of clarity in defining the goal of incorporating video production into teacher education. In this regard, I pay attention to Fletcher and Cambre (2009), who suggested that media production is useful in promoting community engagement. To explain this, they presented the idea of implicated scholarship,

referring to a "means of positioning students, academics, research, teaching, and learning within the social dynamic they inhabit," which constitutes a "humanistic, reflexive, and politically conscious form of intellectual engagement" (p. 111). To promote implicated scholarship, they argued, university classroom activities should change so as to be linked to the social dynamics surrounding universities. In this context, they examined digital storytelling as an example of innovative class activities. Digital storytelling refers to a form of story writing that uses various digital contents, such as digital still images, music, and voiceover narration (Center for Digital Storytelling, n.d.; Fletcher & Cambre, 2009). Fletcher and Cambre concluded that digital storytelling enabled university students to experience "complex intellectual engagement that is at once creative, socially oriented, and pedagogical" (p. 111) and to learn about social issues differently from traditional classroom activities.

Video production is similar to digital storytelling in that both use narrative and visual modes, but unique in that it allows capturing moving images synchronized with sounds. Hence it may offer a distinct pathway for promoting implicated scholarship. This idea is critical to this article. In the article, however, I opt for the phrase *community-engaged scholarship* because it seems more self-explanatory and specific than the phrase *implicated scholarship* for the purpose of my discussion. In what follows, I present the context of my study and outcomes.

OVERVIEW OF THE VIDEO PRODUCTION PROJECT

In this section, I introduce the video production project carried out for five consecutive weeks as part of regular class activities in a teacher education course at a Canadian university. According to its syllabus, the course aimed to "prepare future teachers to be competent media and technology educators" for primary and secondary education. It consisted of a weekly 80-minute lecture and a weekly 80-minute lab session throughout a semester. Nearly 90 students attended the lectures together and divided themselves into four groups to participate in separate lab sessions. As a teaching assistant, I guided the lab activities of two groups — 42 students in total. My discussion focuses on the video production project that these two groups of pre-service teachers were involved in.

The 42 students formed 12 small groups to create short videos related to the overarching theme of social justice. Each group chose a specific topic on their own. To help them develop video production skills, I provided them with copies of a storyboard template and introduced basic camera recording techniques and video editing procedures using the *i-Movie* software installed in each computer (Mac) of the lab. While some students were already familiar with the software, others were not even used to Mac computers. To facilitate the process of video editing, I offered the students the option to bring their laptop computers to the classroom to edit their videos on the software of their

choice. The students were allowed to incorporate existing digital contents, such as videos, still images, and music files downloaded from the Internet or of their own, including copyrighted materials, on the condition that their final videos would not be shared in public. In case of interviewing, the students were asked to obtain informal consent from interviewees. The students spent extra hours beyond the class time for shooting and editing their videos. Their commitment to the project resulted in 12 short videos. Some were created with people outside the class or dramatized; others addressed some critical issues, such as child abuse, immigration, and poverty, using interviews or other forms of video recording. The duration of each final video was between four and seven minutes. On the fifth week, the students and I viewed the videos together in the classroom and had discussions.

In order to gain a deep insight into the pre-service teachers' experiences with video making, at the end of the project, I asked them to write a short individual essay (a couple of paragraphs) about their experiences, with a focus on what they liked or disliked. Their submission was voluntary. They had the option to submit their essays either via email or anonymously by leaving a hard copy in my mailbox. Sixteen of 42 students submitted their essays and all opted for email submission. Although the submission rate was low, the essays provided insight into the students' experiences. Because I wanted to analyze the essays in a research context, I contacted the research ethics board of the university and submitted an ethics application. The board saw my study as a "secondary data analysis situation." Because the course was already over, they waived the requirement of obtaining consent from the individual students. They also commented that anonymous surveys would not require consent from individuals. Upon the ethics approval, I began to analyze the pre-service teachers' individual essays. These are the main source of my analysis.

EXAMINING THE INDIVIDUAL REFLECTION ESSAYS

I examine the essays submitted by 16 of the pre-service teachers who participated in the video project. Using the method for qualitative data analysis suggested by Creswell (2009) as guidance, first, I read the essays several times to obtain a general sense of what the pre-service teachers' experiences were like. Next, I coded them by breaking each essay into small segments as meaning units and selected a significant statement for each unit (Moustakas, 1994). I then classified the significant statements. Through this the following six categories emerged: (1) the use of various digital contents; (2) creativity; (3) technical challenges; (4) the nature of group work; (5) content learning; and (6) the intent to use video production for future teaching. Lastly, with the notions of production pedagogy (De Castell, 2010) and implicated scholarship (Fletcher & Cambre, 2009) in mind, I re-examined the significant statements in each category and across the categories and paid particular attention to conflicting views connoted in the statements.

IMPLICATIONS OF VIDEO CREATION IN LEARNING

I focus on the notion of "creation" that commonly emerged from the pre-service teachers' reflection essays. The pre-service teachers tend to think that the process of creation promotes learning; they, however, indicate conflicting views of creation. While many pre-service teachers emphasized integrating existing digital media as creativity, others pointed to making original video content as an essential aspect of creativity. In what follows I discuss this issue in more detail, especially in relation to its implications in pre-service teachers' learning.

A number of pre-service teachers pointed to the aspect of creation as the reason why they liked the project, as suggested in their comments:

> It is really a worthwhile experience to put what you've learned into action, referring to the content as much as to the process (editing and filming).
>
> The creative freedom for this assignment was enjoyable and enriching.
>
> I appreciate the liberty we were given in regards to our social justice issue.
>
> I really liked this project because it was very different from anything else I've been assigned in the University.

These comments suggest that the pre-service teachers enjoyed the liberty to choose a topic and create content on their own, unlike in ordinary university courses. They also suggest that the flexibility involved in the project enriched their experience of gaining content knowledge. This is indicated more clearly in the following comments:

> I like that the film was on a social just issue because it allowed me to reflect on different issues happening around the world and try and present an issue as a film.
>
> The topic on poverty helped me to adjust my thinking. Knowing that some people have no water made me think of how I could cut down on water.

Several pre-service teachers noted that they experienced content learning either in the process of creating their videos or through classroom screening of the videos created by others. This suggests, as implied in the theory of production pedagogy (De Castell, 2010), that the video project facilitated the process of pre-service teachers' gaining content knowledge by prompting them to explore social justice on their own. The project might have engaged them in self-directed learning in the sense that they controlled what to learn and how to go about it (Knowles, 1975; Tough, 1978).

In a similar vein, many pre-service teachers saw the video production project as a pathway for learning digital technology and pointed to integrating multiple forms of digital media into their videos as the most interesting experience.

They commented as:

> I was able to further expand my knowledge with regard to technology.
>
> I was really moved having the job to look for all the pictures for the slide show.
>
> I am also quite happy that the project guidelines were flexible in the sense that we did not have to have just videos, but could also include text, photographs, and audio recordings.

Very often, the pre-service teachers turned to existing digital materials in creating their videos. To provide a sense of the ratio between new video content (created by them) and existing digital media content (borrowed from other sources), I examined the time length of each content type of the student-produced videos. I included interviews, narration or music over video images, and other recorded video materials as new video content; video clips or photographs downloaded from websites and text graphics showing some relative information (e.g. statistics), as existing media content. Approximately one-third of the final videos consisted of existing media content, and the majority was voiceover narration accompanied by existing still images. Of course, determining what constitutes original video or other content types was sometimes subjective, as multiple content types were often integrated in one segment through the process of editing. Despite some possible incongruity in classifying content types, however, my review suggests that the majority of the pre-service teachers used existing digital media content and turned to literature or other sources of information (e.g. the Internet) in speaking of their video topics.

More interestingly, some pre-service teachers thought that such digital content made their videos more dynamic and powerful. They commented as:

> I especially liked the groups that integrated many areas of technology in their movies (namely video footage, pictures, music, statistics, etc.). In my estimation, this made the movie much more dynamic.
>
> I liked the use of facts and / or statements in the video.

The integration of existing digital media into video production may be helpful to promoting multimodal literacy. Lankshear and Knobel (2006) stated that digital-electronic technologies affect sending and receiving information, which becomes "seamlessly multimodal rather than distinct process for distinct modes (text, image, sound)" (p. 25). They argued that literacy education therefore should change to understand and utilize the multimodal quality of information. Digital video production, in particular, may provide pre-service teachers with an opportunity to experience a "quintessential multimodal literacy that allows orchestration of visual, aural, kinetic, and verbal modes electronically" (Miller, 2007, p. 66) and thus allow them to prepare for teaching *digital natives* (Prensky, 2001), which refer to the generation of youth feeling more comfortable with digital technologies than adults. These arguments are consistent with the above comments made by pre-service teachers. While the majority of the

pre-service teachers championed the capacity of integrating multiple forms of media as creativity, one of them had a different perspective and emphasized the importance of creating new video content. As he put it:

> I really like the fact that my group's film used only original images. It is very easy to take powerful images off the Internet and put them into a film, but it's entirely another experience to use completely original material and content.

The video, *Children* (pseudonym), which this student was involved in creating, deals with children's relationships, such as bullying and caring and expresses them in a subtle but visually astonishing way. As one of the creators of the video explained in class, the video project prompted the children who had participated in the video project to spontaneously talk about some of the issues they had been experiencing; this led the creators and the children to collaborate. Due to the scope of this study, I cannot definitely say about what the pre-service teachers came to learn through the project. The previous quote, however, suggests that the video creators obtained a unique learning experience through collaborating with children to make their video. By talking and interacting with the children face-to-face, they might have been able to access the kind of relationships among children that could be described only through children's eyes and words. Through this process, the pre-service teachers might have had an opportunity to gain knowledge in a way that might not be possible either in an ordinary classroom or through mixing existing materials downloaded from the Internet.

Drawing on this analysis, I want to further discuss the implications of video "creation" in pre-service teachers' experiences of learning. The process of digital editing offers many ways of exercising multimodal literacy and pre-service teachers may need to understand the nature and applications of it. It is questionable, however, whether the experience of orchestrating multiple modes of media is the best thing that video production can offer to learners. Put it this way: What can *video*, which can capture moving images synchronized with sounds, uniquely offer to learners other than providing a platform to combine existing materials and literature?

In one video, for instance, its creators addressed critical issues of water. They often used the form of talking-head shots to provide viewers with relevant information of the issues that they had found through a literature review. Without a doubt, they might have learned a lot about the topic they were addressing through the processes of searching for information and contemplating ways of presenting it. I do believe that speaking in front of a camera, as shown in talking-head shots, requires a significant thought process and that the creators had a unique experience of learning. Their video, however, presents little evidence that the creators explored and delivered the kind of information that only a video camera could afford. In other words, a video camera did not seem necessary for them to access the information presented

in their video. A slide show that includes a series of still images and texts, as if a digital storytelling, could have been sufficient to deliver the same information. Through media production, students can be prompted to engage in "questions of agency, authority and knowledge production" (Goldfarb, 2002, p. 13). Hence, I have no doubt that the video project provided pre-service teachers a unique opportunity to explore and learn new topics. What I want to problematize here is the significance of creating original video content in their learning experiences; in other words, the unique role that video production can play in promoting the process of learning.

One reason why I think of creating new video content as important is that this may lead pre-service teachers to interact with other people and allow them to experience community-based scholarship; in so doing, they can have an opportunity to position themselves within social dynamics surrounding the areas in which they are comfortably sheltered (Fletcher & Cambre, 2009). The creation of new video content may not necessarily entail collaboration with people. Through this process, however, pre-service teachers are likely to gain knowledge that may not be obtainable or discussed in a typical university classroom. Therefore, I believe that teacher educators need to encourage pre-service teachers to create new video content with a video camera through interactions with people in their communities. This approach to video production can allow pre-service teachers to gain a deeper understanding of the topics they explore. What is more, I do not think that focusing on the creation of new video content necessarily diminishes the potential to experience multimodal literacy. As the creators of *Children* demonstrated through their video, pre-service teachers can develop visual sensitivities and aesthetics (Eisner, 2002; Greene, 2001) through the process of contemplating how to effectively deliver stories learned through their community engagement. This kind of sensitivities is much higher and more useful skills than simply mixing media in terms of multimodal literacy.

To advance my discussion on the magnitude of creating video content, I refer to a community-based video project that I was involved in (Yang, 2013). Through the project, I provided a productive space for adult learners to bring out and share grassroots experiences with health care through video making (Yang et al., 2012). The procedures undertaken in the project were similar to that of the case study. The six adult learners, whose ages ranged between their mid-20s and 40s, worked in two groups for six consecutive weeks to create videos and share them with the public. Unlike the case study, no credit was given to the adult learners. The learners and I had regular weekly meetings for approximately three hours per meeting. To create videos, the adult learners interviewed their neighbours, a doctor, and a nurse and talked about their own experiences in front of cameras. Because the learners and I intended to disseminate the videos in public, no copyrighted materials were used and I obtained ethics clearance. A clip from one of the videos created by them is embedded in this article as an example (see Video 1).

VIDEO 1. *Rx for healthcare* (click to activate)

At the end of the project, the adult learners talked about their experiences in the project and submitted short individual essays about their experiences. The participants of the project addressed their experiences as:

> I also learned about the gift of a community, as many people who we interviewed were genuinely concerned about the issue of health and we ourselves learned a lot about the issue as we filmed along, which was a true gift.
>
> Video is another way to reach out to people, meeting people, showing people in a visual way. This way we can make a big difference.

Nearly all parts of the videos created by the participants are comprised of original video content. They include interviews with people in their communities and talking-head shots, in which the learners shared their personal experiences related to the topics of their videos. Through the process of video creation, the project participants sought ways to reach out to their communities. In so doing, they seemed to develop a sense of activism rooted in their communities. Here the video camera was used as a means to connect people and promote community engagement (Baker, Waugh, & Winton, 2010; White, 2003). In comparison, the video camera in the teacher education program was relatively under-utilized; the video project became similar to desktop publishing. I do not think that the project enabled the pre-service teachers to take full advantage of what the video camera could offer, as the majority opted for mixing multiple forms of existing digital media, as opposed to reaching out to their communities to create videos. This might have contributed to limiting the pre-service teachers' practice of community-based scholarship.

CONCLUDING REMARKS

Video production offers profound opportunities for learners to enhance technological confidence and to learn subjects they explore through creative processes. It can also offer them an opportunity to practice community-engaged scholarship through interactions with each other and people in their communities in a way that may not be possible in a typical university classroom. The pedagogical potential of video production, however, can be undermined when learners focus on combining existing digital materials rather than engaging in their communities to create videos. Although the creation of videos through

mixing existing materials may contribute to enriching their content knowledge, this may less likely to promote community-engaged scholarship than video making through community engagement. To promote community-engaged scholarship among pre-service teachers, teacher educators need to encourage pre-service teachers to go into communities to listen to what the members of the communities have to say and to observe what is happening; educators may even want to consider encouraging pre-service teachers to seek ways to collaborate with the members in creating videos.

A potential debate may converge on how pre-service teachers can find sufficient time for community engagement, for, as Hall and Hudson (2006) discussed, they can only allocate limited time for their video projects. Indeed, this may be one reason why many pre-service teachers of the case study chose to use existing digital materials downloaded from the Internet, as opposed to creating new video content. The choice they made indeed reflects Fletcher and Cambre's (2009) criticism that the practice of learning in universities is commonly performed in social isolation. I believe video projects can make a difference. They would not, however, bring about a significant change in this typical learning practice when video cameras are not actively used as a tool to observe environments and interact with people. It is neither a medium nor technology that can make a difference in the ways pre-service teachers engage in learning. In order to offer pre-service teachers an opportunity to experience a radically different learning process and to relate their learning to their communities, teacher educators should encourage them to go to their communities with video cameras and to obtain authentic video footage however trivial it may seem to look. In this way, pre-service teachers may be able to be involved in video projects more meaningfully while minimizing time stress.

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"REFLECTING FORWARD" ON THE DIGITAL IN MULTIDIRECTIONAL MEMORY-WORK BETWEEN CANADA AND SOUTH AFRICA

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ABSTRACT. We explore the place that the digital can occupy in teachers' pedagogical practices around social justice and especially how memory-work can deepen and enhance teacher practices. Like Walter Benjamin, we see memory as being a medium for exploring the past and where the digital provides greater opportunities for teachers to work productively across geographical contexts that are wrestling with issues of social justice. We argue for the potential of Michael Rothberg's notion of multidirectional memory as a logical direction in which to pursue notions of cross-border, transnational productive remembering facilitated by digital means. We also pose a number of questions we see as critical for working through and "reflecting forward" on issues central to digital scholarship within the context of multidirectional memory.

RÉFLÉCHIR À L'AVENIR : LA PLACE DU NUMÉRIQUE DANS LE TRAVAIL DE MÉMOIRE MULTIDIRECTIONNELLE ENTRE LE CANADA ET L'AFRIQUE DU SUD

RÉSUMÉ. Nous explorons la place que peut occuper le numérique au sein des pratiques pédagogiques des enseignants œuvrant en justice sociale et particulièrement la manière dont le travail de mémoire peut approfondir et améliorer ces pratiques enseignantes. À la manière de Walter Benjamin, nous considérons la mémoire comme un moyen d'explorer le passé ainsi qu'un endroit où le numérique offre aux enseignants des possibilités accrues de travailler efficacement au cœur de contextes géographiques aux prises avec des problématiques de justice sociale. Nous soutenons que le concept de mémoire multidirectionnelle développé par Michael Rothberg a le potentiel et constitue la voie logique pour mieux saisir les notions de mémoire productive transnationale et transfrontalière, à l'aide des outils numériques. Nous exposons également un certain nombre de questions que nous considérons fondamentales pour trouver des solutions et réfléchir à l'avenir en ce qui a trait à des problématiques propres à la recherche numérique dans le contexte de la mémoire multidirectionnelle.

> Language has unmistakably made plain that memory is not an instrument for exploring the past, but rather a medium.
>
> (Benjamin in Assmann, 2011, p. 153)

> Where thinking suddenly stops in a constellation pregnant with tensions, it gives that constellation a shock.
>
> (Benjamin in Rothberg, 2009, p. 43)

> Scholarly publications tell the story of data.
>
> (Borgman, 2007, p. 225)

Teachers are the primary "memory agents" in schools, ranging from their role in selecting which texts, approaches to text and projects become the focus of student learning within the curriculum, to the fact that teachers often come to occupy a space in the memories of former students (O'Reilly-Scanlon, 2001) and also need to contend with their own memories of learning, schooling and the curriculum (Pinar, 2011). Teachers also stand at the front lines in integrating technology into the curriculum, developing students' "21st century" skills (UNESCO, 2008). As co-authors, we have all been teachers (elementary or secondary) and are now teacher educators while also being educational researchers; our research regularly brings us back in contact with students and classrooms. We also share an abiding interest in memory in Benjamin's (1999) sense of its being a medium, and have been exploring this interest primarily through actively engaging teachers (ourselves included) in autobiographical and biographical forms of memory-work. Our memory-work projects have primarily been located in two places: Canada and South Africa, with some of us working mostly in Canada and some of us mostly in South Africa. In Canada, one key focus has been Canada's history of relations with Indigenous peoples, especially the legacy of residential schooling, while in South Africa, the focus has mainly been on the effects of HIV and AIDS on rural schooling in a post-apartheid context. Our work has been framed by social justice issues of race and/or gender. Sensing their interrelatedness, we have looked for opportunities to bring this work together through, for instance, a research collaboration on partnerships in education, which resulted in a symposium held in Durban, South Africa in 2007 and an edited book on self-study and social justice (Pithouse, Mitchell, & Moletsane, 2009), but most notably through a Productive Remembering research workshop held at McGill in 2008, which resulted in two co-edited collections of papers —*Memory and Pedagogy* (Mitchell, Strong-Wilson, Pithouse & Allnutt, 2011) and *Productive Remembering and Social Agency* (Strong-Wilson, Mitchell, Allnutt, & Pithouse-Morgan, 2013). These conversations helped us to begin to collectively develop our ideas around memory as a medium for "productive remembering" as phenomenon and method. However, it was only when we embarked on talking about research that each of us had been conducting separately in relation to teachers, students and the digital that we could envision generating "digital dialogue" (Wegerif, 2006) between teachers in Canada and South Africa, and in so doing link

this dialogue to our previous memory work, through what we provisionally called digital memory-work (Strong-Wilson, Mitchell, Morrison, Radford, & Pithouse-Morgan, 2014).

We are interested in exploring the place that the digital can occupy in teachers' pedagogical practices around social justice and in particular, with how memory-work can deepen and enhance teacher practices. As democracies, both Canada and South Africa are haunted by glaring examples of their "present pasts," with apartheid continuing to having an impact on South Africa 20 years after the first democratic elections, and the Idle No More movement testifying to unresolved intergenerational issues from Canada's shameful legacy of Indian residential schools.[1] At the same time, there is also a multidirectional flow between the two countries in relation to these shared histories. Following Canada's example of establishing the reservation system, South Africa established the Group Areas Act in 1950, which legally enforced apartheid. Canada, following the Truth and Reconciliation Commission hearings in South Africa beginning in 1996, established its own structure in 2008, the Indian Residential Schools Truth and Reconciliation Commission. Both countries continue to share a shameful present in relation to sexual violence amongst Indigenous girls and youth women.[2] And yet, the contexts are also positioned very differently with respect to questions of social justice and post-colonialism, with South Africa living out the post-effects of colonialism as apartheid in what is meant to be a post-apartheid state, and Canada wrestling with its status as a settler colonial society and the ongoing legacy of its fraught relations with Indigenous peoples, which have crystallized around residential schools. What would be the educational usefulness of bringing together these shared and simultaneously vastly different political contexts?

The field known as "memory and pedagogy" is concerned with transformation: with how critically engaging with the past / one's past can change the future (Mitchell et al., 2011). Memory studies emphasizes that our relation to the past is about how we live in the present, where memory (remembering / forgetting) entails "working through" the past to avoid repeating injustice or trauma (Hodgkin & Radstone, 2003; Simon, Rosenberg, & Eppert, 2000). Memory-work refers to a set of practices, typically collaborative, that help participants connect personal memories to larger social, political or economic issues and thus work through those issues in ways that engender a deeper commitment or consciousness (Haug, 2008a, 2008b; Haug et al., 1987; Strong-Wilson et al, 2013). We originally coined the phrase "digital memory-work" to articulate an interrelationship between digital media and memory-work that we saw as pending yet imminent, in which digital media would be used to both explore as well as represent memory-work. In so doing, we drew on insights from various fields, including the emerging field of digital memory (Ernst, 2013), linking this with the burgeoning literature on teachers' responsibility to meaningfully integrate digital media in classrooms. We see the potential of digital forms of

memory-work to help promote teacher agency and lead to transformation in classroom practices through teachers leveraging digital tools (e.g., wider range of resources; online dialogue with a broader group of teachers) to access the past so as to investigate social in / justice. "Digital critical pedagogies" is the term we have been using for teaching approaches that can move theorizing (memory-work) to practice (changes in a teacher's pedagogy).

Given that the project data will primarily be in digital form, the question posed by the *MJE / RSÉM* special issue around scholarly representation is highly germane to our thinking through of the project. How might working with the digital in the context of memory-work challenge our present boundaries around what constitutes representation in scholarship and potentially contribute to new insights in research and practice? A preliminary question concerns the implications of setting in motion a "constellation" of memories (very possibly difficult and traumatic) through memory-work with teachers across the two country contexts. What theoretical framework(s) can support the use of digital dialogue for productive forms of remembering that can lead to social agency?

SECTION ONE: MULTIDIRECTIONAL MEMORY-WORK AND THE DIGITAL

Multidirectional memory-work

Multidirectional memory is Michael Rothberg's (2009) alternative to a "zero-sum" (p. 3) game in which memories compete for space and attention within the public sphere. In the wake of the Second World War, but only really beginning in the 1960s with the highly publicized Eichmann trial, personal testimonials and stories of violent injustice began to be unleashed (Rothberg, 2009). Susannah Radstone (2000) has noted the central place of Holocaust memories in shaping the nascent field of memory studies. Rothberg begins his second book by citing literary critic Walter Benn Michaels' exasperation with the public space given over to the Jewish Holocaust in the US Holocaust Museum on the Mall in Washington DC. What about what Americans did to Black people?, Michaels asks. Rothberg uses Michaels' observation as a starting-point for proposing a different reading of post WWII history and thus a different trajectory for memory studies. Whereas Rothberg's first book (2000) focused on the study of literary representations of the Holocaust, in particular those that he called "traumatic realism," in his second book (2009), he delves more deeply into questions of representation — of what kind of story is being told and whose story is being told — by re-envisioning the Holocaust through a lens of decolonization, in which the Holocaust is one (albeit a central) piece of a larger canvas marked by struggles for freedom against violent injustice. How does he arrive at this point? The key elements of his argument are germane to seeing multidirectional memory as a logical direction in which to pursue notions of cross-border, transnational productive remembering facilitated by digital means.

What are those key elements? The notion of multidirectional memory is based on relatedness through juxtaposition; methodologically, it resembles pastiche in the sense that it brings together histories that might otherwise seem unlikely "bedfellows" (Rothberg, 2009, p. 18). It does this by arguing first that memory, "while concerned with the past, happens in the present" (p. 4). Memory occupies a present space that memory studies has tended to characterize as a space of contestation (Hodgkin & Radstone, 2003), in which memories compete with one another to be seen and heard (e.g., counter-memories vs. dominant narrative ideology; counter-memory vs. counter-memory). What we do with the present space, though, suggests Rothberg, is for us to imagine and re-shape; memory as "present past" is ultimately future-directed. Building on that argument, Rothberg argues for memory as a form of work, but on the largest possible canvas so as to allow for "dynamic form[s] of contiguity" (p. 3), with memories intersecting with one another, coming from and moving into different directions. Multidirectional memory is "concerned simultaneously with individual and collective memory" and has focused "on both agents and sites of memory, and especially on their interaction within specific historical and political contexts of struggle and contestation" (p. 4). Whereas multidirectional memory-work might be beginning to sound like memory studies' version of multiculturalism, Rothberg is careful to emphasize the specificity of histories, which remain intact; the overriding metaphor (borrowed from Walter Benjamin) is of elements being brought into "constellation" through being juxtaposed. The constellation (within Benjamin's thinking) produces shock; this shock or "arrest" produced by the constellation is what can lead to consciousness and potentially, social action and change (Strong-Wilson, Yoder & Phipps, 2014).

Multidirectional memory does depend on a comparative approach to memory, but one in which difficult and traumatic memories come to the table on an equal footing; this required Rothberg to come to terms with the place of the Holocaust within multidirectional memory. He develops an argument, begun in his earlier book (Rothberg, 2000), against seeing the Holocaust as a unique event. Based on his re-reading of key authors on the subject of the Holocaust (e.g., Arendt's *Origins of Totalitarianism*, Rothberg, 2009 but also Adorno's famous dictum that no poetry was possible after Auschwitz Rothberg, 2000), Rothberg re-positions the Holocaust within the global effects of colonization and imperialism. He draws attention to the fact that Holocaust memory occurred during the same period as movements for de-colonization but where Holocaust memory has played, and continues to play, a pivotal role in provoking, granting permission for, and even drawing attention to "the articulation of other histories" (p. 6) that pre-date as well as post-date the Holocaust itself.

As such, multidirectional memory relies on both "collective" as well as "shared" memory (Rothberg, 2009, p. 15). Shared memory is predicated on the mediation of memory through networks of communication and refers to

individuals' communicating about memories of an event; it is built on a "division of mnemonic labor" (Margalit cited in Rothberg, 2009, p. 15). Following Halbwachs' classic conceptualization of memory as simultaneously individual and collective (individuals provide the "locus" for remembrance but memories are filtered through living with others and in relation to collective frameworks, Rothberg, 2009, p. 15), multidirectional memory is collective in that "it is formed within social frameworks"; it is shared memory in that it is "formed within mediascapes" that depend on a division of labour (p. 15). Rothberg (2009) has argued that multidirectional memory goes further than either shared or collective memory in highlighting the "displacements and contingencies" (p. 16) that accompany re-telling memories and where those memories take on an "affective charge" through becoming part of a larger constellation or "network of associations" (p. 16). The locus of memory-work is thus shifted as the work is determined in relation to associations and triggers across contexts that cannot be anticipated or foreseen in advance (p. 16): Benjamin's tensions "where thinking suddenly stops in a constellation," giving "that constellation a shock" (Benjamin, as cited in Rothberg, 2009, p. 43).

But what is the purpose of such multidirectional memory-work? Although he writes about history, Rothberg comes out of English Studies. He has been primarily interested in questions of representation. The entire argument of his first book on traumatic realism and the Holocaust rests on his critique of what he often refers to as narrative "continuity" (Rothberg, 2000, p. 229) and that Alice Pitt and Deborah Britzman (2003) (in education) have called "lovely knowledge" (p. 766). Such stories are the bedtime ones with the happy, tidy ending that we may wish to hear but that, especially in relation to trauma and difficulty, we know cannot be true — and that in their inauthenticity, can be harmful and misleading. The key characteristic and insight of what Rothberg (2000) has called "traumatic realism" (as a new genre of Holocaust story) is how it wrestles with the ways in which the Nazis deliberately and perversely yoked the everyday with the extreme. Traumatic realism might be considered as one possible form for multidirectional memory as it depends on interrupting continuity in favour of producing Benjaminian shocks.

Our key question then asks: what kind of pastiche story might be told by bringing together histories as diverse as Canada's and South Africa's? Multidirectional memory begins with dissimilarity "since no two events are ever alike" (Rothberg, 2009, p. 18). Its method lies in constructing links between "disparate documents" (p. 18) and thus, on focusing "intellectual energy on investigating what it means to invoke connections *nevertheless*" (p. 18; italics added). It is that "nevertheless" that discloses multidirectional memory's reliance on the association (which is an old association) between memory and imagination and, in another leap, that despite its "dark subject matter," of being "written under the sign of optimism" (p. 19). One of the main positive goals of multidirectional memory is of "re-framing justice in a globalizing world" (Fraser

cited in Rothberg, 2009, p. 19), thus the need for a comparative approach, like the one proposed in our memory-work project involving the digital.

Multidirectional memory-work, the digital and scholarship

"E-research encompasses a disruptive set of technologies with the potential to revolutionize the social sciences," says Christine Borgman (2007, p. 206), even as she points out that the term "new" is often bandied about but as yet rarely explained (p. 30). Fundamentally, scholarly communications, whether in formal settings (publications) or informal ones (conferences), "tell the story of data" (p. 225) no matter what form that data takes, from biological specimens to pot-shards from an archeological dig to responses to interview questions — to digital objects and artifacts. How will we know what is new? Dutton and Jeffreys (2010) suggest that we take our cue from our everyday lives, where digital devices have brought about fundamental transformations in how we do things. We might expect the same for research, they maintain. The term digital scholarship encompasses research on digital media as well as scholarly communication that uses digital media, says one go-to collaborative e-source that has successfully infiltrated academe, namely Wikipedia. Most research is presently "on" digital media, in the sense of being "about" it. As yet, there are few examples of the use of digital media to present, or represent, research or act as a host / site for research. This dilemma was one encountered by one of the co-authors who encountered insuperable challenges in the representation of her doctoral research on avatars (Morrison, 2009), compelled at the time (by the expected format of the dissertation) to bring avatars from their virtual spaces (their screen homes) to paper. She found that studying avatars designed for dynamic use in online spaces on the static world of a printed page was akin to studying the cinematic contributions of James Cameron by reading his movie scripts and ignoring the visual spectacle.

As a social and shared phenomenon, digital media has become an integral part of our everyday lives (Lankshear & Knobel, 2006, 2008). This has happened in a variety of ways (oral, visual, written) using an increasing array of devices (digital cameras, cell phones, iPods, tablets). The emerging field of "digital memory," based on the idea of the archive as dynamic, comes out of the recognition that memory is not the same for all time and changes according to the context (Huyssen, 1995; Radstone, 2000). Digital memory scholars note that what distinguishes digital memory from classical notions of memory as storehouse is that the present has become more accessible as well as moves more quickly into becoming the digital past (Ernst, 2013). This makes digital memory open to transformation and reinvention (Bouchardon & Bachimont, 2009) but also to being readily forgotten. As Haskins (2007) points out, "large quantities of digitized materials does not translate into a usable past" (p. 419). We live in a digital age of "perfect remembering" with little consciousness or discussion of how and what to remember — or how and what to forget (Mayer-Schonberger,

2009). The ubiquitous — but mobile — presence of digital media has raised challenging questions for the place of remembering and forgetting within society as well as within scholarship. As Borgman (2007) points out, "many of the assumptions about content and context associated with physical artifacts and print do not hold in distributed, digital environments"; rather, "digital objects often are malleable, mutable and mobile" (p. 263). To date, the most cited and debated article in the journal *Memory Studies* is Connerton's (2008) "Seven Types of Forgetting." This due to his fifth type, "annulment", which Connerton ties to the rise of new media. Arguing for the need for erasure, Connerton states: "the concept of discarding may come to occupy as central a role in the 21st century as the concept of production did in the 19th century" (p. 65). This debate was started by Andreas Huyssen (1995), who argued that technology threatens to dissolve the space we know as memory while Radstone (2000) has begged to differ, seeing possibility in a cultural preoccupation with, and working through of, memory through the new medium of the digital.

Multidirectional memory-work would invariably involve the use of those digital tools that are already pervasive and ubiquitous and that are already the focus of shared as well as collective memories through various networks. Multidirectional memory-work provides a needed focus on representation — on which story is being told, by whom and how, using which digital tools to which effect and to what end — and where devising methods of multidirectional memory-work (how to approach, share and juxtapose memories across political contexts) will need to take place alongside conversations around digital representation. These conversations, we argue, are not only useful but necessary, given the shifting tides towards e-scholarship.

In the section below, we briefly describe the project that is underway but move fairly quickly into discussion of key questions and issues surrounding the digital that we foresee as highly pertinent to moving our multidirectional memory-work inquiry forward in the context of digital scholarship.

SECTION TWO: A DIGITAL PROJECT OF MULTIDIRECTIONAL MEMORY-WORK

Our project focuses on the need to increase teachers' fluency with digital media in ways that are critical and thoughtful. Memory-work has proven to be highly effective in linking theorizing with practice by embedding teachers' commitment to teaching to social in / justice first within their own histories then by sharing with other teachers (Elbaz-Luwisch, 2014; Mitchell et al., 2011; Strong-Wilson, 2008). We are interested in the approaches that Schratz and Walker (1995) describe in their book *Research as Social Change*, connecting the self with the social for the purpose of "reflecting-on-the-future" (Wilson, 2008, p. 177). Reflecting on the future involves notions of agency and "anticipatory reflection" on the teaching that is to come (Wilson, 2008, p. 180), as informed by critical reflection on the past. In so doing, we locate our fieldwork within

the kind of participatory forms of research that take account of dynamics of collaboration / collectivity (Achinstein, 2002; Kapoor & Jordan, 2009) and translation into action / practice (Marcos, Miguel, & Tillema, 2009). These forms include: teacher action research and scholarship of practice (Cochran-Smith & Lytle, 2009; Kemmis & McTaggart, 2005; Loughran, Hamilton, Labosky & Russell, 2004); memory-work methods, social autobiography and autoethnography (Hasebe-Ludt, Chambers & Leggo, 2009; Strong-Wilson, 2008; Mitchell et al., 2011; Strong-Wilson et al., 2013); participatory visual methodologies (Mitchell, 2011); and self-study methodologies (Hamilton, 1998; Kitchen & Russell, 2012; Pithouse et al., 2009).

Our project has a dual focus in that it seeks first to create digital memory-work workshops or "digital retreats" (Mitchell & de Lange, 2013) to engage primary and secondary teachers across six sites in Canada and South Africa in investigating social injustice / the present past[3] and second, to support teachers' development of digital pedagogical approaches to social injustice. The workshops are meant to adapt to a digital context the work of Haug et al. (1987) and others exploring memory-work through: group selection of a topic or theme (e.g., "recall an early memory of social injustice"), digitally representing the memories, creating individual and shared digital artifacts, and group approaches to analysis of digital artifacts (e.g., What do our memory pieces have in common? How do differing national contexts / pasts play out? Are there certain dominant themes? What memories / pasts are missing? What do we make of these memories? What next?)

While there will be various follow-up actions to these site-based workshops, and the generation of a range of digital artefacts as data (e.g., cellphilms, i-Movies, digital stories, podcasts, classroom-based social justice projects), three that are particularly pertinent to digital scholarship are:

1. a group webinar in which teachers from both countries will meet on site but digitally screen, critique and analyze their digital memory-work with one another across sites (and consider ways to take the work forward through critical digital pedagogies);

2. a teacher blog in which, using an agreed-upon sharing protocol, transnational groups of teachers will post and respond to visual and text-based examples of their digital pedagogies (teachers will also be invited to "blog" on-going reflections on their own / others' classroom projects, reflections which will also be analyzed as digital data);

3. the creation of a digital archive.[4]

What will be critical is attention during data collection and analysis to conceiving memory-work as multidirectional and, at the same time, wrestling with these ideas in the context of exploring the capacity of digital tools to help perform memory-work as well as represent understandings that are the result

of multidirectional memory-work. Beginning in January 2015, two of the co-authors will be engaged in a pilot project, titled *Exploring digital approaches to multidirectional memory-work*, focused precisely on this: exploring and developing these tools and understandings through professional development research workshops with teachers and teacher educators.

SECTION THREE: THE FUTURE CONDITIONAL, OR WORKING THROUGH THE "WHAT-IF" QUESTIONS

Questions of "doing" — and the types of data produced by researchers and / or teachers as part of the doing (e.g., cellphilms, i-Movies, digital stories) — raise new questions about representation and the ways in which working with digital methodologies, especially those using the autobiographical and autoethnographic, in and of themselves become central to this "doing." We refer to this section as "future conditional" as a way to signpost the space (figuratively and otherwise) that we occupy in our project of multidirectional memory work using digital tools. We foresee questions, ones with no definitive answers, but which may help to chart a path forward.

Our questions are not new, some emerging from the literature and some from our previous work but where we were more focused on "the technologies of doing" and less with "the technologies of representing." In tracing the movement from an analogue model of scholarly publishing to a digital one still coming into being, Pochoda (2012) identifies several "digital affordances" that will drive change; one of these is the ability of content to more flexibly inform format:

> In the Procrustean print system, authors are compelled to fit their argument into the short-form article or the long-form text (itself falling within a limited spectrum of potential lengths). By contrast, the digital regime, in principle, permits publication in any length and in a wide and expanding variety of digital (as well as print) containers. (p. 367)

What will this new regime look like? We are not sure but we know that it will likely be different and that questions central to our own digital memory-work about the digital dialogue in and around the self and between selves are also central to our digital scholarship. Whereas digital technology began as a "sustaining innovation" for the analogue model / print-container (a model inspired by Voltaire's 1770 set of encyclopedias, Pochoda, 2012), allowing it to perform its work quicker and more efficiently (e.g., through scholars' DIY Word formatting of their manuscripts for publishers), the digital has now definitely become a productive yet "disruptive innovation" (Christensen cited in Pochoda, 2012, p. 367), "one premised on digitally inspired and digitally mediated resources and perspectives introduced at every juncture of the system" (Pochoda, 2012, p. 367).

We have found that many issues that arise are not necessarily made explicit in the resulting scholarship, but rather become buried in the sorting out of

things. This was the case for one of the authors in preparing an article for a special issue of *Sociology Online* dedicated to the inclusion of digital material as central to the representation itself. The article draws on work with community health care workers in a rural setting in KwaZulu Natal, South Africa in which the community health care workers engage in participatory analysis in co-creating a digital archive of photovoice data related to stigma and HIV&AIDS (see de Lange & Mitchell, 2012). As the author comments in a set of notes produced during the writing of the article:

> The challenges are not about the technology itself (i.e., creating hyperlinks or preparing the material for a digital realm in other ways). That is easy. But how do we first gain ethical clearance from the participants to have their data part of a public archive when they don't really have any idea what a digital archive is regardless of whether it is restricted or public? And how do we make sure that we don't misrepresent the visual data? It is one thing for us as the research team to screen a participatory video at a conference or public event– we can set the stage- although even there, decisions get made about what images to show outside of South Africa. Sometimes the visual is too explicit. Will this be a case of colonial cringe? (Fieldnotes, May, 2010)

Framed then by this reflecting forward, we offer below the following four questions as a set of "future conditional" "what if" questions and issues. While these are by no means the only questions, they are ones that seem to be particularly critical at this present juncture in the project.

Question 1: What are the challenges in addressing social justice issues through a multidirectional memory lens, across divergent geographical contexts, and using digital tools?

The central challenge is to create a productive context for the prompting of shared *multidirectional* memory-work across continents. In a post-apartheid era in South Africa, memories pertaining to social justice issues will include lingering legacies of the past such as widespread social and economic inequities, impoverished schools, and high levels of violence and xenophobia, while in Canada, social justice issues may be more related to immigration — issues such as racism and persistent social and economic inequities — and, of course, to the treatment of Indigenous peoples, including legacies of residential schools.

Given the highly visual nature of much e-material, as well as the practicalities of working digitally across geographical distances, this work will likely invoke visual images. For instance, it may demand that participants initially engage in the process of what Prosser (2012) has called "picturing atrocity" (p. 12), based on the idea of photography in / of crisis. Batchen, Gidley, Miller, and Prosser (2012) in their book *Picturing Atrocity: Photography in Crisis* are speaking of pictures of atrocity in public journalism, offering close readings of images depicting atrocities in the Congo in the early 20th Century (Twomey, 2012), the "iconography of famine" (Campbell, 2012), images of the civil rights movement in the US (Abel, 2012), through to the mushroom cloud of Hiroshima

(Hariman & Lucaites, 2012). Their work anticipates, we would argue, the types of digital representations that might also be produced in digital photovoice and participatory video projects as well as the kinds of images that teachers may have accepted on faith as trustworthy. If so, these visual representations are likely to bring particular demands in terms of critical engagement (e.g., as prompts for discussion) and then re-represented multidirectionally, perhaps through the creation (within and across geographical contexts) of "dialectical images," which rely on juxtaposition to instigate a shock or "standstill in a constellation saturated with tensions" (Benjamin in Abbas, 1989, p. 59). At the same time these images may be framed as what Brown and Phu (2014) refer to in their book of the same name as "feeling photography."

Dialectical images are often staged images (e.g., in Canada, of the photograph of a photographing of the Royal Canadian Mounted Police standing alongside a First Nations chief in front of a teepee; see Simon, 1992, p. 144). In their analysis of images produced in community-based research in rural South Africa, Mitchell, de Lange, Stuart, Moletsane & Buthelizi (2007) highlight the ways in which photos, especially those that are "staged," can be particularly provocative, raising questions about what should be used in public contexts. A photo on stigma "staged" by a group of grade nine boys, for example, depicted a boy committing suicide. Their caption for the photo, "Suicide," read: "*He can't accept that the HIV is positive. He feels he has to commit suicide because he would not like to tell people that he has AIDS*" (p. 66). Batchen et al. (2012) make the argument that photographs of atrocity (and we would argue that "Suicide" is an example) carry with them "a particular set of ethical responsibilities" (p. 15). While the authors are speaking more of media representations produced by professional journalists as opposed to community researchers using digital tools, we would suggest that the same rules should apply:

> The media (photographer) has a responsibility to contextualize and caption the atrocity photography correctly. We have a responsibility to read the image closely — perhaps not immediately to trust what we see in the image. If an atrocity has been committed, someone is responsible. This matter of responsibility gave rise to the first humanitarian campaigns that worked with atrocity photographs. Do we also have a responsibility to respond to the photograph beyond simply reading it? What is the question that atrocity photographs ask of us? (Batchen et al., 2012, p. 15)

Susan Sontag (2003) makes a similar argument in *Regarding the Pain of Others* when she observes: "narratives can make us understand. Photographs do something else; they haunt us" (p. 80). What we need to anticipate then is discussion and contextualization of images by teachers engaged in "digital dialogue" with one another across geographical contexts, and where images would serve as only one kind of prompt that would lend itself to digital dialogue; others would be films, popular culture, objects (viz., pictures of objects) as well as writing, including literary writing, by published authors and / or by the teachers (Strong-Wilson et al, 2013a).

Question 2: How do we interpret the presence of multimedia in our scholarship on multidirectional memory-work?

Related to the first question, when data is collected, archived, analyzed and disseminated through multimedia / digital forms, the tendency may be to privilege these accounts as more truthful or trustworthy, based on the positive social prejudice towards digital formats which are associated with relevancy and innovation. In the wake of poststructuralist frameworks, we know that truth is relational and that words, representations, and subjects are unstable and often contradictory. With autobiographical / autoethnographic research, we are also dealing with the subjectivity of lived experience. Lived experience as refracted through a multimedia format may seem to provide more direct and immediate access to experience: a first-hand, witness account. We need to be careful not take the image / visual at face value as evidence of truth, and instead contextualize it as a version of an event or experience, which we see as central to multidirectional forms of memory. We need to begin from the premise that just like print text, multimedia data forms are value laden, are subject to interpretations as diverse as those who view / listen / experience them, and may even be commercially or politically driven (e.g., by relying on particular programs or software). Also implicit in media constructs are power structures imported from the social and cultural contexts within which they exist (Fiske, 1996), which includes the power to access particular media and technologies. What this implies in multidirectional memory-work using the digital is the need to foreground process and participatory approaches to data collection and interpretation / analysis. A foregrounding of process would involve the documentation, theorizing as well as engaging of the participant in reflection on the "construction scars" (Pinar & Pautz, 1998) involved in working in / with the past before these traces disappear into the final work. Using the digital, this would mean using the blog to good effect. Through participatory processes of engaging with one another's digital "data" (viz., through memory-work across geographical contexts), teachers can be invited into a collective process of interpretation, similar to métissage (Hasebe-Ludt et al., 2009), in which the teacher authors construct narratives out of the pieces of their "pasts," read and critique one another's pieces and in which, in a digital prologue or epilogue, they reflect on the outcome as well as process. A scholarly article may also take the form of a teacher blog, in which teachers show, for instance, the process by which digital memory-work was transformed into digital pedagogies, or how digital dialogue across transnational contexts informed the creation of particular digital pedagogies.

Question 3:What is the relationship between the autobiographical and autoethnographic, and use of the web as public sphere for multidirectional memory?

One of the key issues emerging from digital scholarship is the ephemeral and mutable character of digital media, the fact that digital records cannot survive

by "benign neglect," therefore need to be curated (Borgman, 2007, p. 263). Even as we worry over the future of its traces, because they are embedded within a distributed sphere (the web), they can be keyword searched (another digital affordance) and thus become permanent, un-erasable (Mayer-Schonberger, 2009), and redistributed in another context remote from multidirectional memory; even, misused. Once the data becomes saved in digital format, even if password-protected, might it become accessed anywhere-anytime (e.g., through being shared by teachers with others)? How much depends on an individual's ability or desire (or prior knowledge) to establish privacy settings? As Jones (2012) points out,

> existing paradigms of the relationship between media and memory and associated theoretical models are "inadequate for understanding the profound impact of the supreme accessibility, transferability and circulation of digital content: on how individuals, groups and societies come to remember and forget (Garde-Hansen et al., 2009, p. 3). (p. 391)

Another question is: what will teachers themselves consider as ephemeral and as "collectible" and why?

In raising this last question, we identify concerns about the private and the public. The adding of hyperlinks, for instance, is Google's attempt at a cultural institute: making available through virtual museums the last century's historical and cultural events, archived photos, manuscripts letters and first hand video testimonials. The Google "World Wonders Project," which links street view technology with UNESCO world heritage sites, represents an extension of that project. What are the implications of using digital forms of memory-work (which though collective, begin with the private and autobiographical) for digital pedagogies which are necessarily shared and public? Will we inadvertently be contributing to the creation of a virtual museum of the personal? And if yes, what will be the implications of this for future generations? We do not yet have answers to these questions, beyond creating password-protected sites.

Question 4: What are some of the new ethical challenges associated with digital representation in multidirectional memory-work?

There is perhaps no issue that is receiving more attention currently than the ethics of self-representation in a digital age particularly in the context of "selfies" and online-bullying. While much of this work takes place within a DIY culture, what happens when it is part of a data-gathering project? What are the responsibilities of the researchers to safeguard participants, and in the case of the teachers as consenting adults, what should be the guiding principles? To gain ethical clearance for research projects from university ethics boards, it is customary to make a commitment to protect participants by ensuring confidentiality and anonymity. However, when participants are producers of digital artifacts such as online videos or blogs, they might well choose to "go public" as the makers or authors of their work (as discussed in the previous section).

But what about others, such as participants' family members or former teachers who might be identifiable in digital memory-work artifacts even if their names or faces are not made public? How will researchers and participants address the blurring of the lines between their roles in the research, a challenge in participatory approaches to research, but with particular dilemmas when dealing with digital data and artifacts?

Another concern is that memory-work, especially when focused on issues of social injustice, can elicit painful stories of the past that can be traumatic for those who lived through the distressing experiences and for those who are hearing about or seeing these reconstructed memories (see for example, Masinga, 2012; Mitchell, 2011; de Lange & Mitchell, 2012). While we have developed strategies for attending to the possible emotional consequences of memory-work in our face-to-face work with teachers (Pithouse et al., 2009), the public and essentially uncontainable nature of digital scholarship presents us with new, somewhat unpredictable challenges. What does this mean in relation to traditional forms of academic dissemination (even those making provision for digital scholarship) and the everyday uses that participants might want to make of their own digital self-representations?

Who will "own" the digital artifacts that are produced? With these blurring of the lines come questions of ownership, for instance, with respect to copyright and distribution. We live in a "share culture" in which the teachers involved in research projects may very well wish to share their artifacts (and perhaps those of others) with colleagues, friends, and family as well as posted online on sites accessible to many others. While we do not see this as problematic (and even potentially highly desirable), we acknowledge that when the boundaries become widened, it can be a challenge to locate impact and track distribution of the research. As "ephemera," the artifacts may potentially pass beyond the ken of the researcher. New ways to engage with distribution and archive may need to be devised in light of such digital, participatory memory-work research.

The digital setting of the research can be an occasion for addressing digital dialogism as the scene for a multiplicity of voices and perspectives *writ large*. As we know from Bakhtin (1984), dialogical texts can help us understand relations in ways that are not mechanical as they avoid authorial finality. Digital dialogical texts can further blur the lines to allow for multiple, non-subordinated perspectives. Gubrium and Harper (2013) highlight the potential of dialogic editing, something that we see as being further enhanced through access to google docs and other digital platforms.

Hence, we see the involvement of the teacher participants as crucial in developing appropriate, context-sensitive ethical guidelines for the project. We anticipate that the ethics of the project will be the subject of an ongoing conversation with our participants as the project evolves and new ethical dilemmas must be attended to. Thus, a critical and self-reflexive study of the ways in which ethical issues play out will be a key aspect of our project.

CONCLUSION

Matthews and Aston (2012) maintain that multimedia (such as, but not limited to audio, video, and digital image) is much more than a simple tool for recording and documenting research in the humanities and social sciences. It is the primary research output. Memory, as Benjamin suggests (in the opening quote), is itself a medium for sharing and communication. Multidirectional memory depends on the critical and creative generation that comes about through "constellation" across tensions. In this paper, we have sought to bring to bear the pending digital platform for scholarship to multidirectional approaches to memory-work for social justice, as we see these movements as in productive tandem but accompanied by the need to "reflect forward" on challenging questions immediately ahead. What story do we want our data to tell?

NOTES

1. Idle No More is a grassroots social movement of in Canada that was initiated in 2012 and galvanized significant ongoing public attention to pressing social and political issues affecting Indigenous people in Canada.
2. One of the current conversations that studies this shared history is located within a 6 year SSHRC and IDRC joint-funded partnership (Mitchell & Moletsane, 2014-2020) called "Networks for Change and Well-being: Girl-led 'from the ground up' policy making to address sexual violence in Canada and South Africa."
3. Session One: Collective Remembering & Social Justice Issues; Session Two: Working with Memories (including ethical issues around memory-work, the digital, & teacher collaboration); Session Three: Digital Memory-work Part I; Session Four: Digital Memory-work Part II; Session Five: Viewing & Critiquing Digital Productions; and Session Six: Envisioning Theory to Practice.
4. Our plan is to collect data based on the teachers' digital artifacts (e.g., digital stories, i-Movies, cellphilms, etc.) as well as documentation of the teachers' process (individual and collective) of working with / through the past using digital forms of memory-work, the teacher blog, and the creation of a digital archive composed of data from the project as well as links to pertinent websites. We will use NVivo to work with digital data across sites as well as draw on digitizing coding methods informed by participatory analysis so that teachers can be invited into the data analysis process through individual and group coding.

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NOTES FROM THE FIELD / NOTES DU TERRAIN

USING INEXPENSIVE TECHNOLOGY AND MULTIMEDIA TO IMPROVE SCIENCE EDUCATION IN RURAL COMMUNITIES OF NEPAL

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ABSTRACT. This article explores an ongoing project that promotes science education in rural communities of western Nepal by using affordable technology. With the advent of inexpensive technology and multimedia resources, teaching materials for science education can be accessed with a much smaller budget than was previously possible. A preliminary survey done in two schools of Baglung district in Nepal found a significant lack of funding for science education. Using affordable computing technology such as Raspberry Pi and open-source electronic library contents, including those provided by Khan Academy and Wikipedia, this project will help foster the currently underutilized talent that exists in the country by making communities less dependent on external educational aid and hence promote ownership and progress of online educational platforms.

UTILISER DES TECHNOLOGIES PEU DISPENDIEUSES ET LE MULTIMÉDIA POUR AMÉLIORER L'ENSEIGNEMENT DES SCIENCES PRODIGUÉ DANS LES COMMUNAUTÉS RURALES NÉPALAISES

RÉSUMÉ. Cet article met en lumière un projet en cours, projet facilitant l'enseignement des sciences au sein des communautés rurales de l'Ouest du Népal, par l'utilisation de technologies abordables. L'avènement de technologies peu dispendieuses et de ressources multimédia permet désormais un accès à moindre coût au matériel nécessaire à l'enseignement des sciences. Une étude préliminaire effectuée dans deux écoles du district népalais de Baglung a révélé un manque significatif de financement dans le domaine de l'enseignement des sciences. En utilisant des technologies informatiques abordables comme *Raspberry Pi* et le contenu de bibliothèques numériques à source ouverte, comme celui offert par la *Khan Academy* et Wikipédia, ce projet encourage l'utilisation de talents actuellement sous-exploités en réduisant la dépendance des communautés à l'égard de l'aide externe en éducation. Ainsi, il favorise la prise en charge et l'évolution des plates-formes éducationnelles en ligne.

I visited a public school in Jhimpa in 2012. Located in a remote western village of Baglung, Nepal, this school was established in the 1950s with much effort from local leaders, one of them being Jibraj Sharma. A legend I heard was that he would go out to the grazing area every morning to coax young children to leave their grazing cattle and come to the school with him so that they could get a primary education. Jibraj Sharma, formally educated in Vanaras, India, ran Jhimpa School like this for several years. He would give them sweets, making them promise that they wouldn't inform their guardians, most of whom weren't able to justify a need for education to their children. Decades later, some of the pupils are now teachers in the same school, and the others have taken up other forms of occupation than herding.

As I was growing up in Baglung and Kathmandu, my grandfather, Jibraj Sharma, was still serving his community in the different ways that he could. After high school, I moved to Canada, where I started my undergraduate degree in electrical engineering, frequently asking myself how I could use my education to benefit my community.

In Montreal, as a graduate student in neuroscience, I am looking for ways to get involved in knowledge translation, a crucial aspect of science research. After hearing an award-winning McGill graduate talk about how a microscope given to her by her father at an early age led her to a path of curiosity and observation, I was motivated to think about ways to inspire the curious young minds of my community in Montreal and in Jhimpa. I have been participating in BrainReach, a program run in Montreal by graduate students of McGill University. Every month, we spend an hour with grade nine students talking about various topics in neuroscience and doing neuroscience experiments. Such exchange between young students who are just starting to learn about science and graduate students who are delving into science research, I thought, can be fruitful to incite curiosity among young students in Nepal. Thus, I thought about running a similar workshop for kids in my native community in Jhimpa.

THE COMMUNITY

Nepal is geographically divided into three main terrains from south to north — the plains, the hills, and the mountains respectively. In the hilly regions of Nepal, villages are communities living together on the hill's slopes. Usually each hill is separated from another with natural streams of water, important sources of hydroelectricity and drinking water. Jhimpa is a small village of 200-250 households on one of such hills in mid-western Nepal. As shown in Figure 1, Jhimpa School lies at the bottom of the Jhimpa hill. Most of the villagers rely on subsistence farming, producing rice, wheat, vegetables and dairy. Being there, one gets to eat one of the healthiest and freshest diets. On the other hand, the community suffers from poor quality of education, inadequate

health care, and a decreasing number of youths, most of who have left the village in search of job prospects in Middle Eastern countries.

In April of 2012, nearly sixty years after Jibaraj Sharma had persuaded students to attend school, I, along with Sunisha Neupane and Rajan Poudel, were in Jhimpa School in a focus group discussion with students, teachers, and parents.

FIGURE 1. *Jhimpa School, located in Baglung, Nepal*

Teachers and parents held common opinions about the issues, often dwelling on the lack of infrastructure and financial stability. They wanted their pupils to be able to study science so as to pursue careers as engineers or doctors, which they believed would ensure financial stability to some extent. Their concerns were mainly with the existing educational system and tended to converge on the issue of inadequate educational funding. With little or no faith in the interim government, they unanimously favored an international donor agency's attempt to solve the issues.

Following centuries of hereditary monarchy and oligarchy since 1768, a parliamentary democratic system was practiced for the first time in 1990 (after a short stint in 1958, which was swiftly overthrown by the then King) in Nepal. Since then, the rural areas of Nepal have been potent playgrounds for political movements, armed revolution, and election campaigns, which have brought strong skepticism towards the political leaders. The same rural areas have also been labeled as underdeveloped and poor by the political leaders, foreign development agencies, and consequently by the community members themselves. Although it is true that the mountainous terrain makes it difficult to build infrastructure, ultimately bringing the communities below par in the international standards of health and economic indices, it is not fair to undermine the potential of rural Nepal by simply labeling it as poor and

backward. It seems there is a lack of a consensual definition of "development" and "poor", but still a preponderance of the notion to "develop" this "poor" community. A historically hierarchical societal structure, over two decades of unstable government, and the subscription to neoliberal notions of development have manifested in a deep-rooted inferiority complex within the community members of this young democratic country.

Talking to students was an inspiring experience. They were focused on the positive impact of education rather than on the lack of financial resources, as voiced by their elders. They wanted to become educators, scientists, journalists, doctors, teachers, and so on. It took me back to secondary school when I wanted to become a pilot. Instead of getting bogged down with the classic problem of lack of finances in schools, I wanted to focus on the aspirations of these students. What is to become of thousands of young students, full of ambitions? Is there a way for them to grow up where they can reason their way out of the vicious cycle of being victims of poor governance and dependent on international aid? I want their aspirations to mature and not fade away so that they are not creating yet another generation that seeks aid and produces "third world kids." I want to find ways to empower the young people so that this cycle breaks. Building terraces of rice paddy fields on steep hills of Nepal is a great engineering feat accomplished centuries ago. I want to encourage students to reflect on such indigenous knowledge and conceive novel ideas built on traditional as well as modern science, instead of dropping out of school with the belief that "we are underdeveloped." We would like the entire younger generation, not just a small group of academics, to be capable of questioning the existing hierarchical notion of the developed and the developing. For that, we not only need to educate young students in Nepal, but in every part of the world.

MOTIVATION AND CHALLENGES

When I returned to Montreal, I was clueless about what could be done to empower the students in my community. The subsequent steps and projects are the outcome of the thinking and discussions held with several people in this process.

Could I bring a microscope to the community and expect to produce young science enthusiasts? Wouldn't that be the same as monetary aid, donated computers, or any form of charity? I thought of my high school days and realized that studying science starts by being curious. In grade 12, it was mind boggling to me that one electron particle could simultaneously pass through two holes, similar to what was shown in Young's double slit experiment. I asked my physics teacher, G. G., about this with little capacity to understand his answer. Then, I got hold of *A Brief History of Time* where Hawking's (1988) explanation somewhat satiated my discomfort with the fact. Regardless of the level of my

understanding at that time, what had happened was that a curiosity was being developed and nurtured. Something to reinforce my curiosity helped — a book, an available teacher, and time to spend on the question. We need to find ways to wake the young minds up and not let them fall back asleep. I would have slept had I not had access to the book, access to the teacher, and the freedom of not worrying about my school uniform or my unknown future in-laws (teenage girls being married off is still a common practice in rural Nepal and is a major obstacle in girls' education). Improving science education is not just an isolated goal by itself. It is interdependent on the economic, social, familial, and personal situation of the students (Duflo, 2012).

One cannot hope to educate young people at the present age without computers. The One Laptop Per Child (OLPC) endeavor, although an attractive technological solution to weak educational infrastructure, has been likened to a postmodern colonial approach and would only add to the hierarchy of developed and the developing (Leaning, 2010). It is crucial to keep in mind Freire's (1972) approach of critical pedagogy while utilizing innovative and inexpensive technology. Critical pedagogy involves learning with utmost consciousness, critical thinking, questioning, and sometimes even changing the role of a teacher with that of a student. In order for critical pedagogy to work, students must be fearless to question. If we manage to find ways to do that, OLPC-like projects can progress in a positive way. The community members must have the ownership of any development program that is run. Unfortunately, most of the existing models of development are aid-focused and not inclusive of communities' needs, thus are unsustainable and imposing. Therefore, the goal of improving education in Jhimpa is twofold — firstly, to find a way to create an online platform for education based on critical pedagogy, and secondly, make it such that the platform is sustainable and not dependent on external aid. The former can help not only Jhimpa but also educational systems around the world. The latter can bring ownership of the educational system to the community members since ownership is crucial to break the hierarchical structure often created by external donation-based projects.

A POTENTIAL SOLUTION

Open source knowledge and technology was a promising start. Building a library could be a resourceful means to augment the slowly emerging science education in rural Nepal. A computer-based electronic library is easier to transport and less expensive than books. The concept of an e-library is not new, and there have been successful efforts to build them in Nepal (Help Nepal Network).[1] It could appear challenging to build one without support from a donor agency. However, one possible solution is Raspberry Pi, a low-cost single board computer[2] (cost: $35, weight: 45 g) designed specifically to promote education. Wikipedia, Khan Academy (KA),[3] and WOW lab[4] are few of the many freely available educational resources out of which an e-library can be built on these low cost machines.

With the technical support from a non-profit group in California, an offline package was built consisting of selected Wikipedia and KA materials, along with an operating system ready to be implemented on a Raspberry Pi computer.[5] It was an open-source package ready to be set up; I just needed to assemble it and bring it to the community. The additional costs besides the Raspberry Pi were a 32 GB storage device (SD) card ($35), a monitor ($75), and a mouse and keyboard ($5), bringing the cost of the entire setup to $150. Raspberry Pi is designed in such a way that it can also be connected to an old television set. Therefore, despite monitors being the primary cost of the project, there were less expensive possibilities. The library materials could be updated by bringing the storage device of the central server to an Internet access point in the district capital. This has been done before by a group, which used Raspberry Pi to create an offline KA library.[6] By using a bigger storage device, the central server could be extended, and a broader e-library could be created, consisting of more contents in addition to the KA videos. A similar project has been successfully implemented in schools in Ghana.[7] This project would not compete against other existing projects in Nepal or elsewhere, but build on them and create richer open-source knowledge to build low-cost, offline e-libraries in rural communities.

BACK IN THE COMMUNITY

In December 2013, the Raspberry Pi setup was installed in two of the surveyed schools, both located in the village of Jhimpa. A micro hydro plant supplied power to run the e-libraries.[8] There was a welcoming response from the teachers and the students. The students were particularly very eager to get their hands on the computer and navigate through Wikipedia. Establishing an e-library in Jhimpa has opened up sources of knowledge to students who never had access to a library before. However this change has also increased the responsibility of Jhimpa's planners and teachers to explain the value of a library to students.

The e-library has been well received in the community. While we were there in December 2013, neighboring villages heard about the e-library, which led the principals of schools in those villages to come and talk to us. They had been encouraged by the rumor of how inexpensive it was to build a library with scores of books and even videos. This is the type of reassurance that will help in developing a community with sustainable educational projects — a notion that "we can do it ourselves."

Teachers at the school were especially excited to incorporate videos in their teaching methods. Khan Academy had finally reached this remote village of Nepal and given them the opportunity to use audio and visual methods in education. Students were lining up to experience, for the first time, being in a library with a computer. One could think of the high turnout as beginner's luck, but there is also something important that we can take from it. Students

are receptive when they see something out of the ordinary. It is up to the teachers and the planners to grab this opportunity to foster the creativity and curiosity hidden inside the young minds.

With an active participation of a local leader, Shanta Raj Sharma, the school managed to get two British volunteers, high school graduates recruited by a British NGO called Project Trust, to assist in teaching English by providing accommodation and food allowance. They started their work immediately after the computers were installed in January 2014. They were in the village for a total of eight months during which the school as well as the entire village gave them a warm welcome and support. For the first time, there was a native English speaker teaching English to the kids. A great deal of positive feedback was received from the teachers and students who were learning how to use Wikipedia from the British youths. They revealed two important observations — firstly, the students and teachers were very much interested in the pictorial and video presentation of educational materials. It seemed like the KA videos did generate enthusiasm in students to learn science. According to the teachers, videos were especially useful to visualize scientific concepts. On the other hand, because the videos had not been translated to Nepali, it is not clear if the users actually understood the content. Secondly, the girls enrolled in grade five and onwards were extremely passive in terms of class participation, sports and in the usage of the library. The volunteers clearly noticed a serious lack of confidence among the female youths of Jhimpa, the brutal reality of rural Nepal. Although the new e-library and foreign volunteers created enthusiasm in the school community, empowering adolescent girls and women of Jhimpa remains a daunting challenge.

CRITIQUES AND FUTURE WORK

Inevitably, I also became that person living in Canada who feels for his community and wants to give back. I must learn from my community in order to serve, but serving out of pity is false generosity (Freire, 1972). Community development is a process where ideas get exchanged and discourses take place to work towards a common goal for uplifting every member of the community, not just a privileged few. Fund raising and donations were out of the question because such charity creates hierarchy, which enslaves the community members instead of liberating them. Liberation here means being able to think and decide freely and being fearless to take decisions and question with no sense of inferiority. However, even bringing $150 Raspberry Pi was indeed a charity at a small scale, thus conceiving a small hierarchy within the community. If I am testing an idea, its implementation will depend on the needs and activism of the community. Among the people, we want a notion of "we did this because we needed it and this idea worked" and not the notion of "Mr. X was so generous that he gave us a computer." The first notion empowers the community whereas the second notion perpetuates a sense of indebtedness.

What we have learned thus far is that it is very important to engage the community members in the process of creating something new. The affordable cost of the e-library has been crucial to not perpetuate the aforementioned hierarchy. However, it has been a challenge to shift the focus of community members from the computer to its contents. Perhaps it is natural because this was the first time the school had a computer in its study room and after the initial excitement wanes, they might focus on the content and e-technology learning tools.

The e-library resources have been originally developed in English, while people speak Nepali in local communities. This issue can possibly be resolved, firstly, by utilizing resources like KA and Wikipedia that are available to some extent in Nepali. Secondly, there have been efforts to translate KA videos in Nepali by a few volunteers.[9] However, these translation efforts, albeit growing, are not as large as those seen in more widely-spoken languages such as Spanish or Hindi. When the students use these resources presented in English along with contents translated in the language they are comfortable with, their quality of English can be expected to improve. In such a scenario the students themselves are a source of knowledge transfer, translating contents in English to Nepali as well as training their juniors. It is also the purpose of this article to bring together the Nepali diaspora studying in various institutions around the world to join hands in translating and adding to the library contents.

The next phase of the project is to replace the vulnerable desktop setup of screens and peripheral devices with even less expensive portable tablets. In such a setup a single Raspberry Pi will serve as a central server providing access to the e-library over a local network. Any device with Wi-Fi can then access the library.

Using inexpensive technology like Raspberry Pi can solve the issue of sustaining e-library equipment. It wouldn't be a burden for the schools to include the cost of such a setup in its annual budget. This could potentially solve the issue of dependency on external aid. I find that the bigger problem is to come up with ideas to encourage students to read and learn and to encourage girls to participate in learning as much as boys. Usually, economic models propose monetary incentives such as scholarships to keep students enrolled and to encourage them to excel in school. Rewards can be very helpful in training. However, when students start framing questions out of curiosity, incentives might actually limit their capabilities. Their focus should be to find an answer to their question, not to come up with a question or an answer so as to merely achieve some reward. In other words, the quest for knowledge is a character of humans that has the potential to transcend the desire of maximizing utility, the basis of most economists' arguments. So far, my effort has been to try and communicate with the students in writing. If students respond, it would be interesting to try to have them communicate with students of their age in

Canada. Exchange between young people around the world can prove to be beneficial to both parties.

Lastly, the interaction between parents and teachers cannot go unnoticed. It is true that rural communities do lack financial abundance and stable, well-remunerated teachers, which are crucial for imparting good science education. Lack of teachers in rural areas is not an isolated problem but a global one all over the world. Serious effort from the government and consciousness among people about community building is needed to solve this issue.

CONCLUSION

Perhaps, the parents living in Jhimpa in the 1950s were right about questioning the importance of primary education for their children. What was missing was a discourse on the questions they raised — what is the value of education in this year's agricultural yield? Or those raised by local scholars like Jibraj Sharma — how can Jhimpa's indigenous knowledge find its place in educational institutions? Likewise, science education can only improve in Jhimpa if the community members regularly discuss their children's education amongst themselves, with educators, government officials, and also with their children. The Raspberry Pi-based e-library is merely a tool to be utilized in a way the community deems best.

NOTES

1. See http://www.helpnepal.net/projects/completed/education/2011
2. A single board computer is a functional computer including a microprocessor, memory, input / output, and storage built on a single circuit board (https://www.raspberrypi.org/help/what-is-a-raspberry-pi/).
3. See https://www.khanacademy.org/about
4. See http://wowlab-blueprints.mcgill.ca
5. See http://rachel.worldpossible.org
6. See http://khan.mujica.org
7. See http://www.raspberrypi.org/archives/4178
8. Electricity is a requirement for any computer to run. A mere ten years ago, most of the rural communities of Nepal did not have access to electricity. After the end of civil war in 2006, the Nepal Power Development Project, a project to promote off-grid micro-hydro energy, has progressed steadily (Sovacool, Bambawale, Gippner & Dhakal, 2011), resulting in the rampant establishment of micro-hydro electricity plants in rural villages of Nepal, including Jhimpa.
9. See http://www.youtube.com/user/KhanAcademyNepali

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STORYTELLING AND TRAUMA: REFLECTIONS ON "NOW I SEE IT," A DIGITAL STORYTELLING PROJECT AND EXHIBITION IN COLLABORATION WITH THE NATIVE WOMEN'S SHELTER OF MONTREAL

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ABSTRACT. Storytelling is a way of dealing with trauma. For many of those who have experienced trauma, sharing one's own experiences, in the form of a personal narrative, can help to develop new meaning on past events. *Now I See It* was a storytelling project that resulted in a collection of photographs taken by members of the urban Aboriginal community of Montreal. The project was run through the Native Women's Shelter of Montreal in 2014 and exhibited in the educational department of the Montreal Museum of Fine Arts. *Now I See It* was a way of creating an "'internal map"' because trauma is so painfully hard to see and the experience is so different for each individual.

RÉCITS ET TRAUMATISMES : RÉFLECTIONS SUR « NOW I SEE IT », UN PROJET DE RÉCITS NUMÉRIQUES ET UNE EXPOSITION EN COLLABORATION AVEC LE FOYER POUR FEMMES AUTOCHTONES DE MONTRÉAL

RÉSUMÉ. Le récit numérique est un moyen de surmonter les traumatismes. Partager ses expériences traumatisantes en en faisant le récit constitue pour plusieurs personnes ayant vécu un traumatisme une façon de donner un nouveau sens aux événements passés. *Now I See It* est un projet de récits numériques avec comme résultante une collection de photographies prises par les membres de la communauté urbaine et autochtone montréalaise. Ce projet a été piloté par le Foyer pour femmes autochtones de Montréal en 2014 et présenté au département de l'éducation du Musée des beaux-arts de Montréal. *Now I See It* est une manière d'élaborer la « carte interne » de traumatismes très douloureux à comprendre et dont l'expérience est différente pour chaque individu.

STORYTELLING AND TRAUMA

> *When I was numb, I had so much fear. I felt a great loss of all the ways that I did not participate in life. But, then I learned that fears are meaningful.*

Storytelling is a way of dealing with trauma. For many of those who have experienced trauma, sharing one's own experiences in the form of a personal narrative can help to develop new meaning on past events.

In the dominant historical narrative, Aboriginal peoples were removed from the Canadian landscape, and Canada is portrayed as an empty land with a "disappearing Indian" population (Smith, 2005). For many Aboriginal people in Canada, trauma is often transmitted intergenerationally and rooted in the residential school experience, dispossession of land and way of life, as well as in decades of abuse in the youth protection and prison systems, among many other forms of persistent colonialism (Wesley-Esquimaux & Smolewski, 2004). These diverse and multiple forms of persistent colonialism have been, and continue to be, present in the lives and stories of First Nations women. Native author Cynthia Wesley-Esquimaux (2009) wrote that

> for generations, First Nations women's voices were silenced in historical narratives that sidestepped their influence and power [...] First Nations women are beginning to understand that many of the social problems they deal with everyday have roots in the extensive historical trauma that was experienced, but never properly voiced out and represented. (p. 20)

By re-telling one's own stories — that is by using different kinds of imagery and exploring alternative ways of interpreting one's reality — storytelling can provide a sense of hope, belonging, and meaning for people in light of traumatic experiences (White & Epston, 1990). In Rita Joe's (1989) poem about surviving residential school and her loss of native language as a child, she wrote, "I lost my talk, the talk you took away," and later, "let me find my talk so I can teach you about me." The *Now I See It* project was one such effort to explore the relationship between personal narratives and trauma using storytelling and digital photography to re-tell and re-imagine individual experiences. Quotes from one of the project participants and co-authors, Carole-Lynn Byington, are woven throughout, appearing in italics.

THE "NOW I SEE IT" PROJECT

Now I See It was a storytelling project that resulted in a collection of photographs taken by members of the urban Aboriginal community of Montreal. The project, run through the Addictions Program of the Native Women's Shelter of Montreal (NWSM) lasted from January 2014 to October 2014, and consisted of weekly photography and writing workshops. The end result was a series of photographs taken by the participants that were exhibited at the Montreal Museum of Fine Arts through their *Sharing the Museum* Program. There were eight participants who all self-identified as Aboriginal women; however, one participant discontinued with the project, as she lost contact with facilitators.

The first step in the project was distributing donated digital cameras to the participants, which the participants kept throughout the entire process, though some chose to use their cellphones or tablets. The participants were encouraged to photograph the people, places, and things that were special to them in Montreal and share them during the workshops. Several initial workshops were led by Odile Boucher, a local photographer and volunteer at the NWSM,

in order to introduce the medium of digital photography, including composition, framing, lighting, and portraiture. Other workshops focused on writing, photographic critique, and different aspects of digital storytelling.

These weekly meetings also provided a space for critical discussions surrounding the photographs of the participants as they would often take pictures on their own throughout the week and then share their photos at the group meetings or one-on-one with facilitators. Often, the photos taken would be of a particular place or person in the city that was extremely meaningful to the participants. By sharing the pictures with the group, and by telling the stories related to a series of images, participants began to develop personal narratives on their lives in the city.

As participants became more confident in their work, they took turns leading the group in walking tours of the city. Having spent time living on the street and in shelters, many of the participants had an intimate sense of the geography of the city, and were excited to share meaningful places with other participants and facilitators. Many participants were very interested in construction sites as signs of changing landscapes and gentrification throughout the city. When showing a particular place or building, some participants connected this change to a longer history of colonization and their personal relationship to land ownership and development.

> *At the beginning, when I began writing about other peoples' photographs, I couldn't feel what they were feeling. I thought I had to put myself in their spot to see what they saw. But then I saw everything. I saw beams, a crane, and I watched the buildings grow in the photographs.*

In the final stages of the project, the photographs showed a variety of different thematic similarities, most notably urban development and the intersections of internal and emotional, with external and physical, geographies. At the end, participants collectively decided to name the photographic series *Now I See It* as a reflection of the small moments and hard-to-notice changes they captured in the surrounding urban landscape.

THE PROJECT PHOTOGRAPHS

One participant, who came from a family of Mohawk iron-workers, took photographs of construction sites, documenting industrial machinery, and the beginnings of concrete and steel buildings. She explained:

> I relate to construction and things getting built because my father was part of that and had his own construction company. When we were young we used to sit and watch them work on the family business. I know what they're doing and I can describe it in detail.

She then recounted how she learned the names of building parts, machinery, and the workings of structures growing up: "It's watching something get put

together. If you have a part missing it's not necessarily secure. It's a really strong way to communicate with people — learning how things are made."

FIGURE 1. *Construction site*

For this participant, her fascination and intimate relationship with construction work was beautifully communicated through the photographs and the stories she shared. In showing the photographs to the group, she spoke at length about her own personal connection to construction as well as the Mohawk community. In taking the photos, this participant described her desire to challenge the viewer to be able to see the construction sites and buildings in the same way that she understood them, and in doing so, she often positioned herself in specific ways to take the photographs. At first glance, many of her pictures appear disorienting to the viewer because of the unorthodox placement of the structures within the photographic frame. It is only with closer study that one can begin to distinguish specific elements so as to see the whole picture. More

specifically, for one of her photographs, the participant described lying down on the ground to be able to capture a lamppost jutting across a space to touch another building. The overlapping of visual characters against the sky creates an unsettling dynamic within the photograph: one generating feelings of both tension and delicacy, since looking from another perspective would show how physically apart the building and the lamppost actually are.

FIGURE 2. *Lamppost and sky*

This same participant often spoke of having many loud and overlapping thoughts and of sometimes becoming lost in the city, even in familiar places. At times, her photographs also show this disjointed and chaotic mood that she described, but also a majestic order through the towering buildings, cranes, and organization of the large structures. She would walk for hours all over Montreal, looking for things and places to photograph. She stated:

> The noise and the movement is what drew me to take pictures of construction. The noise level in the construction sites were the loudest in the city. It's the feeling of just beginning, the overwhelming feeling when they are just starting, closing the area, putting up signs, putting barriers so pedestrians can walk next to the site. When you go there just as they are starting, you feel overwhelming energy. There is excitement and happiness, as well as focus. It is a humongous thing they are going to do.

One afternoon, this participant's affinity for loudness brought her to walk to Montreal's Trudeau Airport. One photograph from this series shows the tail of a plane against a grey sky. Unsure if the plane is landing or taking off, the photograph captures both intense power and movement, but also stillness.

Perhaps this duality is something the participant understands as someone struggling to find a permanent home and internal peace in a busy city. When sharing these photographs with the other members of the project, she often spoke of temporality with regards to specific places: the small changes over time and the stillness that can accompany slow evolution. She said, "when you look at something, it's not one space. There are many spaces in space. Even in a little picture the space is so big. For each person, space is different."

Another participant took hundreds of photos of her family and friends, with a special focus on her baby, whom she adores. Having moved from Nunavut to Montreal, her photos show a tightknit and growing urban Inuit community.

FIGURE 3. *Baby*

When the photos were developed and given to her, she in turn gave them to her family members. She also proudly displayed some in the Native Friendship Center of Montreal, along with postcards advertising the project. While museum spaces have tended to impose anthropological views on Aboriginal peoples and cultures, this participant curated her own exhibition in a space that was familiar and used by the Aboriginal community. By transforming an informal community drop-in space into an ad-hoc gallery, the participant described how she had a growing sense of belonging to the space and to the city. Claiming this space as her own was a strong statement, demonstrating an assertion of her presence as a member of the urban Inuit community and also the strength of strong family bonds.

> *In my tradition, things are just lent to us. This means that we have to share everything. By taking pictures, you are sharing. Through each eye that sees, they see and feel different things.*

Another participant who was approaching the end of her pregnancy at the time of the project took many close-up photographs of insects and flowers, noticing the tiniest details in her surroundings. This participant described how taking snap-shots of everyday things in close detail, such as a grasshopper or the inside of an orange flower, helped her to focus on "new life" and the "beauty of small things."

CREATING, DISCOVERING AND CONNECTING

> *In the project, I wrote poems about other people's photography. When I started writing, I saw beauty – so much beauty – sometimes it could be haunting, because you are going into a space of imagination.*

Gabor Maté (2008) in his book, *In the Realm of Hungry Ghosts: Close Encounters with Addiction,* argued that effects of early trauma on the brain often influences an individual's capacity to feel certain emotions, such as producing a reduction in some emotions, while also an increase in others, and that this can lead to substance addiction. Maté (2008) also argued that most people who have addictions and who are homeless have also experienced trauma or "great pain" in early life. While not all participants of the project had struggled with substance abuse, many of were formerly or currently homeless at the time of the project. Also, many of the participants self-identified as having experienced trauma in both childhood and adulthood. While this project was not clinical in nature, understanding how the participants made sense of their own experiences of trauma was important.

Through discussion between the project facilitators and participants, there was a general understanding of their traumatic experiences as engendering fear, emotional disassociation, and feelings of being unsafe in certain spaces. Some women described the physical sensations they felt as a result of their trauma, such as a "disconnection" from their bodies, a physical and mental distancing from their surroundings, and even panic when moving through the urban spaces around them. For those who have experienced trauma, being mindful of one's surroundings can be very important (Maté, 2008). The hope was for this project to help cultivate the participants' sense of belonging, connection and identification with urban surroundings, through using photograph and re-telling stories. Creating a voice through digital storytelling can help to re-envision experiences and relationships, which can be very important for survivors of trauma.

Furthermore, it was important for the project participants to address the relationship between their Aboriginal identity and the source of their trauma. As Wesley-Esquimaux (2009) wrote, "the metanarrative of the Western world

simply did not include the indigenous story of loss, impermanence, and socially debilitating marginalization." For Aboriginal women, cultural, geographical, and personal loss were widespread, as were the silencing of their narratives and voices. Within the current Canadian context of the tragically rampant murder and erasure of Native women (Harper, 2009), the women participants assert their physical and cultural presence in Montreal through their photographs. In despite of their lived traumatic experiences and the many hardships they face, the photographs show happy family moments, the strengths of structures, the beauty of small things, and a knowledge and sense of belonging to the city.

FIGURE 4. *Cranes*

CONCLUSION: NOW I SEE IT

> *Traumatized people want security, a safe space. Every pain is a brick in a wall. We end up by closing ourselves in. We don't want people to come in and know our stories or spaces. When I was traumatized I made that wall so thick. Later, I started taking down those bricks to see some light. I had to make peace with each brick. Cameras and pictures and be a freedom for traumatized people. The camera is the eye; no one can take that away from them. It's their eyes and their views, that part belongs to them. When I was alone and lost I made myself my own little prison, an obscure space. But now my space is so big.*

Lee Maracle (2010) wrote about stories and geographic knowledge creation in her work, *Stories are Internal Maps.* In this work, Maracle (2010) theorized that stories are maps of people's intimate experiences, just as land maps illustrate

the physical world. The title of *Now I See It*, chosen by the artists, fits with the theme of living with trauma and creating an "internal map" because trauma is so painfully hard to see and the experience is so different for each individual. Through digital storytelling the participants externalized their hidden internal emotional landscape, similarly to the scaffolding and beams in the construction site photographs — while scaffolding and wires will one day be covered with plaster and concrete, the same can be true with emotional pain. And, the deconstruction and rebuilding of this internalized world can be powerful, beautiful, and freeing.

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CAROLE-LYNN BYINGTON a participé au projet et est une aînée/guide spirituelle. Elle a vécu la majeure partie de sa vie adulte dans les Laurentides, au Québec. Plus jeune, elle a résidé à Winnipeg et Vancouver. Au cours de sa vie adulte, elle a prodigué des conseils et a guidé plusieurs personnes.

PEER-REVIEWER ROUND TABLE RESPONSE TO TED RIECKEN'S SCHOLARLY PODCAST, "MAPPING THE FIT BETWEEN RESEARCH AND MULTIMEDIA: A PODCAST EXPLORATION OF THE PLACE OF MULTIMEDIA WITHIN / AS SCHOLARSHIP"

CARL LEGGO & ANTHONY PARÉ *University of British Colombia*
TED RIECKEN *University of Victoria*

ABSTRACT. Beginning with the question of blind peer review in the shifting landscape of multimedia publishing, and concluding with reflections on knowledge-creation in today's academic culture, Riecken, Leggo, and Paré respond to Riecken's podcast-article and reflect on the challenges of multimedia and other non-traditional forms of scholarship for the academy and for scholarly communication. Leggo and Paré were the peer reviewers for Riecken's article, which is part of this same issue and can be listened to here: http://mje.mcgill.ca/article/view/9061. Since they hail from the same vicinity, they convened an author-peer reviewer round-table discussion on the issues raised in writing and reviewing a multimedia article. We are pleased to share their conversation.

TABLE RONDE DE PAIRS ÉVALUATEURS : RÉPONSE À LA BALADODIFFUSION UNIVERSITAIRE DE TED RIECKEN « DÉFINIR LES LIENS ENTRE LA RECHERCHE ET LE MULTIMÉDIA : UNE EXPLORATION EN BALADO DE LA PLACE DU MULTIMÉDIA EN / COMME MÉTHODE DE RECHERCHE »

RÉSUMÉ. Dans les paragraphes suivants, Riecken, Leggo et Paré abordent dans un premier lieu la question de l'évaluation effectuée par les pairs et à l'aveugle dans le paysage en constant changement de l'édition multimédia, puis terminent par leurs réflexions sur la création du savoir dans la culture universitaire actuelle. Ils réagissent ainsi à la baladodiffusion de Riecken et réfléchissent aux défis que présentent le multimédia et les autres formes non traditionnelles de travaux universitaires pour le milieu et les communications académiques. Leggo et Paré sont ceux qui ont révisé l'article de Riecken, qui fait partie de cette édition et est disponible au : http://mje.mcgill.ca/article/view/9061. Puisqu'ils resident tous dans la même region, les pairs évaluateurs se sont réunis sous forme de table ronde pour discuter des enjeux soulevés par la rédaction et la révision d'un article multimédia. Nous sommes ravis de partager cette conversation avec vous.

ANTHONY PARÉ: I do remember listening to the podcast and loved the idea…

TED RIECKEN: Well, and apologies for the [non-anonymized version]. They actually sent you the wrong version. You both commented, "well, he said who it was so I couldn't do it blind." But I sent them an anonymized version where I bleeped out my name and institutions and I sent them the one for their review. They sent you not the anonymous one, so it was hard to do blind.

CARL LEGGO: But then, that does raise interesting questions about the whole blind peer review process, especially for certain kinds of work.

ANTHONY: Well, especially when you can hear the person's voice.

CARL: And I thought we would have recognized your voice after a little while, right? Because it is a unique voice, and I would have almost certainly entered into that mellow, mellifluous tone and said, "oh, I know this person," [laughter,] which is, [what] happens sometimes in writing too, right? You're reading something and, "oh, yeah, I know…"

ANTHONY: Sure, sure, sure.

TED: But the question, I guess, that Anila and Teresa are trying to answer is what's the role of this kind of media in academic discourse or in research? And then you took it a step further, Anthony, when I answered it from a number of different perspectives or tried to, and [you made the] point that there's a bigger, underlying question, and that's "what's the rhetorical purpose of this stuff?" We have the article and the chapter in the book to advance argumentation, but if we have something that's not quite aiming to do that, then where does it fit? And what is the purpose of this sort of work? But then I suppose you can ask the same thing of your work [to CARL]. What is the purpose of crafting poetry? It's to make a…

CARL: Especially including poetry in…ostensibly academic essays, so doing something hybridized, something that is different from the typical rhetorical norm. What I'm always keenly interested in, of course, is who establishes the discursive traditions and rules by which we conduct our work? And why do essays in academic journals all look so much the same? I just received my latest issue of *Educational Researcher* from AERA,[1] right? And these days, I'll now open it up, look at the table of contents, and I think, "in the last ten, twenty years of my life, will I ever want to read any of these articles?" And if I think the answer is no, I just bluebox the journal. I know I can always find it again online anyway. But the thing is, the articles in the latest issue of *ER* are *totally* uninteresting to me [now], *totally* irrelevant to any work that I'm interested in. And so it may be something to do with the scholarship of education, but it's the scholarship of education as perceived by others.

TED: You're right, and I think that…

ANTHONY: I think that this is not an uncommon experience. I think that in a sense, we've come to the end of an era, a long, long era, really. In the English tradition it starts in the 1600's, the recording of the Royal Society of the Natural Sciences or whatever it is. So the beginning of the academic essay, beginning of the academic article, is there. But I think we've come, for really good reasons, to the end of that kind of tradition because we are trying, in a world that's gone multimodal and multi-literate, to keep a tradition that really grew up at a time when print was suddenly available and distribution was possible. But we're now in a new world. And so you see this mushrooming of other venues, like the blog and even tweeting, academic tweeting. And I think that my question about, well, "what's the purpose of it?" was not to suggest ever that there isn't a purpose but to suggest that this new genre, this new forum and form is going to do different work than other things have done. And we were happy with the academic journal, I think, until recently because it did a particular kind of work, and the work satisfied the needs of the community and satisfied the needs of the members of the community for the advancement of knowledge. But there's some need for new forms, otherwise it wouldn't be springing up. What work will it do that's different from [previously]? I think that's really important. What your work, Carl, does *always,* I think, is it upsets the apple cart. You're in the middle of an academic essay and suddenly there's a poem. [CARL laughs.] So it's a disorientation that serves a rhetorical purpose. It calls attention to the certain kind of thing that wouldn't be called [to] attention if it weren't a poem. And I think that same thing with this notion of what a podcast does. I don't know what the multimedia possibilities of an online journal like the *McGill Journal of Education* are. I don't know where those possibilities are, where they go, but they're going to go. They're there. They're starting to happen and I think it's exciting. Yeah.

TED: And I think the editors raise an interesting question just by posing it in journal format, because we've long had orthodoxies within this tradition that if we adhere to them so tenaciously, that the new blood coming in can't relate to them. Then we'll face the same kind of crisis of recruitment that the Catholic Church has faced in terms of, "who wants to be a nun?" "Who wants to be a priest?" Well, it doesn't speak to the twenty-first century in a way that it might have three or four hundred years ago. So we've got the same sort of adjustments to make in terms of, "how do we communicate?" "What sort of media do we embrace?" "What do we credit and recognize as legitimate ways for people to put their thinking out there?"

CARL: I think the big deal is for folk our age to recognize that the digital literacies and media that are now available to us are only about a decade old. And so we've grown up through a bunch of decades when the technologies that were available were the technologies that we used. And so we might have felt a certain restriction around some of those technologies but what we accept is that this is what we can do. And now, of course, everybody is

carrying a smartphone. And, of course, we're a whole lot smarter now than we ever were without a smartphone [laughs] because of the capabilities of it in terms of camera, the photography, video recording, and access to and so on. It's astonishing what it has opened up for us. So, actually, now we have the technology to do things that ten, fifteen, twenty years ago would've been incredibly expensive and far more time-consuming to have engaged with and probably would have involved using the resources and services of a lot of people with the technological expertise and high end equipment and so on. And now we actually have the equipment. I'm just not so sure — this for me is always a big issue — so now that we have the equipment will we know what to do with it? [laughs] Are we just going to use the smartphone like a pen?

ANTHONY: Yeah, and I think that the other issue, [of] course, is that systems of merit and the systems of assessment and the systems of promotion and review and all that remain very firmly in the grip of the people who favor print and favor prestige. So it's all that we... I was at a faculty discussion the other night in which people were being encouraged to look at new ways of developing and distributing scholarship. But, who's going to tell a pre-tenure faculty member to take a chance and start publishing a blog rather than trying to get into a prestigious journal because then they'll pay for it. And I think we're at a moment now where, on the one hand, we need to break free from those kinds of ridiculous bean-counting exercises, like looking at impact factors that marginalize people working in new areas, in cutting edge areas and also favor [the rich]. The rich get richer, just makes the possibility of new journals and new forms or new genres within that community... [it] stops them from developing because there's this power. So how do we break that down? How do we make it possible for someone to come up for tenure with a blog that's been running for five years and gets 20,000 hits a year? That's stunning. Way more than [any will] ever read any of that person's articles, right? So how do we develop those responses that recognize and value that kind of work?

CARL: It's tough.

TED: Yeah, yeah. How do we transform — the term I use in the podcast is the "coin of the realm" — how do we move from one recognized form of currency to something that has equivalence?

ANTHONY: Sure, exactly.

CARL: So we want an academic bitcoin.

TED: Yeah that's right. Shifting from the British pound to the Euro. [Laughter.]

CARL: Yeah. We know what we want, but of course, that, it's all going to be a very slow process. It's interesting how often in university contracts for tenure and promotion there is a significant part of the contract that speaks to the value of creative and performative work. And I've just been reviewing

a colleague for another university, and, once again, it's there. And it applies to this particular person who's done a bunch of creative work. But I also know from sitting on lots of committees, personnel committees, that creative work is frequently not given the attention that it deserves, on the one hand, but also that the contract calls for it. Even when it's in the contract, it is still frequently ignored by people who have no understanding of the works. So, in a way, I think that what *McGill Journal* [*of Education*] is doing here, now, is opening up possibility through the whole journal issue and through including your work, Ted. But I think the journal is opening up possibilities that could have significant consequences for other people down the road. But it's going to be a relatively, probably going to be a relatively slow, conversation because — so we've got our smartphones, so within ten years, the technology has just so quickly changed and so on — but, of course, our traditions haven't changed very much at all.

ANTHONY: No, they haven't.

CARL: And really, they haven't changed, probably, in decades and decades.

ANTHONY: Yeah... one of the things, the popularity of the TED Talks...

CARL: Yes.

ANTHONY: Now the TED Talks are just academics, most of them, talking. Doing mini lectures. How come our journals didn't do that when they could have done, even ten years ago? That's one of the things that we talked about when I was at the journal. We now have this open access online presence. We have YouTube channels, we have... there's a way in which you could get people to... Carl Leggo reading his poetry as a something. It's going to be slow to happen though. And like you, Carl, I can't imagine how these review processes — we're in the middle of one of course, I've got a colleague who is going up for a promotion — and the measure of quality measures, in a sense. And this is why it's hard for them to recognize creative works. Number of citations. Somebody does a play or somebody does a performance. How are we going to measure that? What are the metrics, to use a word that is increasingly used in our lives. What metrics will we use?

TED: Well, and then it's compounded by this slowness. We were talking, before you arrived, about the messiness of the democratic process, whether it's review processes, or the multiple layers of input that we build into the university structure. [It] makes for a huge amount of engagement but it also makes for a very, very slow turnaround process or decision-making process. So, this case in point, not with any criticism intended, but this podcast is probably close to eighteen months old now. If it didn't have to go through this kind of review and editorial and refinement process, I could have hit publish on an RSS feed or on an iTunes account and it would be out there the next morning or that night. So we have a very slow to change, but also slow to decide, process.

CARL: Oh, absolutely. But again, see, we've gotten used to the slowness of the process, being well-seasoned academics. So we anticipate that we will always be submitting something new, something else that's coming back for revision, something else is out there in the world being reviewed. As a poet, one time it took me eighteen years to get a poem that I really liked published. It would come back every year rejected, but I kept sending it out and in the eighteenth year, somebody finally published it.

ANTHONY: The world had caught up with you, Carl.

CARL: Yeah, yeah, yeah. But I wouldn't give up on it, right? But isn't it interesting, that as part of the culture of submitting poetry, I was willing to engage in a process where I simply... I never revised the poem. Always liked it the way it was. I looked at it every year wondering if I should revise, but no. I kept sending it out exactly the way it was. But we're used to that. We're used to doing things in very slow kinds of ways. But that's not serving the role of scholarship in community contacts, in public dissemination. And so, it doesn't serve... it doesn't serve things there well at all, because the real value, I think, of the new technologies, the new media, is immediacy. And so I want what some have called a "telemediacy," right? that we can speak to issues relatively quickly and not that we are producing the work quickly. The work is coming out of a lifetime of commitment and reading and writing and so on. But that we can actually get work out there because we have something to say that people need to hear. So in other words, I would like to see, I guess, more of a connection between journalistic practices and academic practices. I think academic practices have accumulated a vast baggage that slows us down.

TED: That's a nice way to situate it because what I find frustrating about the immediacy part of all of this is that it's often coupled with brevity. So you have a tweet, or you have a hundred and sixty characters to talk about something that needs a more journalistic, a more in-depth inquiry or discussion. But, on the far end of that spectrum is the academic process, which is prolonged and *really* laborious. But I think it was your comment, Anthony, you said, "well, what is it that journalists do that podcasters are perhaps doing again?" Is the kind of investigative work that we do, if we're going to podcast, any different than what CBC[2] might produce or NPR[3] or people who are skilled at doing inquiry and putting it out in these forms?

ANTHONY: Yeah, I think that [about] your question about what's the difference between good anthropological ethnography and good travel writing, right? It's really not. It's that one went through all sorts of review and the other didn't. But I think that the whole question of currency and speed is interesting because one of the big values of writing, to us as a species was that it slowed down the production — speech — [CARL chuckles] and made you, forced you into a kind of reflectivity that might not have happened otherwise. So there's also something there. Yes, it's immediate and I totally agree with it.

I think, "here's this fund of knowledge and expertise in universities that takes a year, at least, to respond to current events, and by then they're no longer current and maybe not even events anymore." So is there some way that we can —especially in communities — where we can respond to needs in communities more quickly than we have? Yes, sure. On the other hand, how do we preserve what we've had in the universities all along, which is the privilege of reflection, the privilege of deliberation, and the privilege of quiet reflection *before* speech. So that's the other trade off. How do we balance those things?

CARL: But see, this is really valuable — thinking about it in that way — because as you were speaking then, Anthony, I was thinking that you were describing the work of the poet precisely. So that, see, maybe we should all just write poetry [laughs]. It usually comes back to that. But when you write poetry, you can't do it quickly. W. B. Yeats, of all the poems that he published, it was only one, that one short poem that came to him almost intact as he wrote it down. Otherwise he always labored long over his poetry. So I think what we're getting at here is the, what we actually are not honoring, I think, adequately in the academy, is a *lingering* with the writing, be it poetry or essays or whatever. And similarly, we're not lingering with the performative, like with the rehearsals of the performative. Because I would like to encourage us to think about — indeed, the TED Talk would be a *great* idea — but to linger with the idea of teleprompters, of rehearsing, of working with a few coaches who could guide you and so on. So that when you make the presentation, it is good. Remember in the early days of the video discs, back in the later eighties and so on, and some of our colleagues started producing things on video discs? But you'd inevitably end up with the very dated look of those things very, very quickly, and often after a very stilted kind of presentation and so on. So they were never really all that useful to anybody really. But, the big deal for me around time is not the time of the actual production of the work itself, it's the time of the review. It's the time of the bringing things out into the world. It's eighteen years for a poem, okay. Three, four years for an academic article. How many of us have been sitting in various files somewhere in the world with anticipation that they might one day be published? But, you know...

TED: Well, particularly, if we think about the anxiety that this produces. We're on the other side of it now, but if you're in a pre-tenure process [CARL: Totally.] and are waiting for that to come out. Eight is the magic number. You've got seven but you can't quite reach eight although you've got this letter, and it's crazy.

CARL: Or you've been in the profession for the six years leading up to tenure and so on. And you've got a dozen articles in your CV — maybe fourteen, fifteen articles — but a whole bunch of them are in press. And so how does that... they're in press for very good reasons, it took some time to get up to the place where you had things to write about or whatever, and to submit.

And they're all in the hopper, all in the process. And so I think that the issue of time is a very interesting one because I think we want to encourage the reflective time for the production, but we want to see things done in a more timely fashion being sent into the world.

ANTHONY: You're right, the review process slows us down. And I think there are a number of problems. One of the problems is — and all three of us experience this — the increased demands on all of us for certain voluntary work. What we do, they say, outside of our tasks, right? All the reviewing and doing external reviews. There's a lot of volunteer work that we do or very underpaid work that we do, to keep the academic, scholarly enterprise going. And I find a shortage of patience for that. I found it when I was a journal editor. I found it harder and harder to get people to do reviews. They were so busy. That's one thing that's a concern about that kind of system, choking itself by just too many new scholars desperately needing publications, a mushrooming of journals all needing reviewers. How do you get that work done? There's another part of this, I'm not sure how this is connected, but I see this pressure to publish on young scholars or on pre-PhD, like, pre-graduate, just horrible because it robs them of the opportunity of taking the time of doing the kind of rehearsal-like work of taking a chance. Who would take a chance to do something like what Jean Mason[4] or what Charlotte Hussey[5] did? Taking a chance with a dissertation that is really out there on the edge. If you didn't get published while you were doing it because you were doing such an experimental form, or that you risk daily. I just see that as really, really unfortunate.

CARL: Yeah, yeah, yeah.

ANTHONY: I also wonder about new metrics, again to go back to that. We do now have — and maybe it's the time that it will take — we do now have this notion of hits, google hits, as a new way of measuring somebody's influence, and possibly as a much more valuable way, or accurate way of reflecting influence, and the ISI number, the impact factor of a journal. And it may be that that's going to change. It may be that someone's coming forward with a blog that's had its certain [impact]... maybe that will eventually [happen]... but it's not going to happen soon.

CARL: And I think of course, there will, I am sure, continue to be real challenges around the evaluative efficacy of hits because, being a grandfather to four little girls, I get to see a lot of *Frozen* parody on YouTube, and so — *Frozen*, the movie — right? And it is astonishing how many hits some of these YouTube productions receive when it can be as simple as a young girl, probably distinctly Asian-Canadian or -American, dressing up like Princess Elsa and doing the whole make-up thing so that eventually she's transformed herself into a quite Queen Elsa lookalike person and so on. And my granddaughters, the two older ones, just watch this fascinated. And of course the hits marker is there, and it's astonishing.

TED: It goes viral.

CARL: There you go. It goes viral, right? And of course if you could sell three or four hundred books of poems in this country, you'd think that you've got a bestseller on your hands.

ANTHONY: That's right.

CARL: So, but anyway, I think that maybe the real problem around evaluation assessment for the purposes of tenure, promotion, and so on, maybe the real problem is that just like evaluation assessment of writing in schools, we — in order to tame the complex messiness of the process — we've reduced everything to a five-paragraph essay, which we can then mark according to a specific heuristic or rubric. And it seems to make things easier but of course all that it really does is tame the wildness, which is what I do feel is happening with most of the significant academic journals in education that I know. Not the new or online or arts-based journals that I increasingly am seeking to publish in, but something like *Educational Researcher* is looking increasingly like a journal that wants to sustain traditions that I was anticipating would be in fact contravened or transcended some years ago under other editors. But it looks as if in the usual way of several steps forward in making some progress around transformation, now it looks as if the editorial team has actually stepped back a whole bunch, and now we've got these articles. And I have no doubt that the articles in themselves are valuable in a traditional academic kind of way, but I also don't think that these articles are speaking to the current culture of academic research, which is a different culture from anything we've had in the past.

TED: Agreed. And that's the challenge. I mean, culture, you used the term, "tame the wildness" or we could frame it a little bit differently and say, you just prune off the outliers. [CARL: Yes, right.] So there's always this press toward the middle, this maintenance of the conformist as a way to ensure that the culture endures. So we have that bedrock, that central set of values that gets passed on, and all the weird and the strange and the bizarre are the fringe that may or may not survive because they're killed by the frost or trimmed off or... so, how do we bring in newness to this entity that DNA says "thou shalt produce" and anything that's a threat we trim away? So, that's that.

CARL: Well said.

ANTHONY: Maybe that's one of the interesting things about the study of genres, is that genres protect themselves. They are forms that by the very virtue of their repetition and historical continuity are just the way things are done. Just become the way things are done. So something new is not recognized, or it's thought to be out, an outlier. And it's "how do you break these genres? How do you upset them?" And I, like you, Carl, I thought, I did think that we were actually coming into an era where that, first of all, qualitative research would

take its place as a valued way of coming to know, that we would understand the variety of knowledges and the variety of ways of knowing. This was a moment in human development where we seemed to be becoming enlightened around some of those things, but what you see is a pulling back. You see a longer time to publication, you see much more emphasis on evidence-based research, which means, in people's minds, statistical or some form of counting... I mean, the Provost at McGill was often quoted as saying that the plural of anecdote is not evidence, [CARL laughs] which is not true. For me, the plural of anecdote *is* evidence. If the stories begin to resonate, then there's something that you should be paying attention to. But there is that idea that if it's simply a story, if it's only a poem, how can it tell us something?

TED: So I'm looking at my little timer on here. We've talked for half an hour. That's, I don't know, how many pages of transcript [All laugh] it gives the editors? But we should probably wrap up pretty quick and send it off and we'll see where it goes from here.

ANTHONY: I think it's great and I think that you're courageous to have taken it on, Ted. I would *love* to see us doing something like that here in the department for our webpage, to do some LLED[6] TED Talks, to have fifteen-minute lectures. Get everybody in the department to do a fifteen-minute talk on something that they're [doing]... and then just post them. I think it'd be great. And again, I think they should put it in their CV.

TED: We've done something like that at UVic.[7] It's been coordinated through the Vice-President of Research's Office and they call it "Faces of UVic," and they're trying to get faculty to sit in front of a camera, be interviewed by a professional videographer, who then takes that twenty-minutes and boils it down into a ninety-second "here's what I'm about." But again, that sort of editing and looking for thematic content and putting it within a genre, whatever the way of framing it is, is a skillset that not all of us have.

ANTHONY: You can't just use your cellphone.

TED: You need to be trained. That's right, that's right.

CARL: And I did have one of my poems filmed a while back as part of a celebration of Killam awards at UBC[8] and so a team of three came with their cameras out to Steveston, to Garry Point, and we probably spent a couple of hours in the late afternoon, early evening as they filmed me reading and re-reading and re-reading the poem and then eventually constructed the minute-and-a-half or whatever it is presentation of the poem. And it's *very* beautifully done. And I've realized, of course, the kind of art that can be created when you've got people who know their business with a camera, right? And with angles and light and so on. So I don't want to, in a way, because the technology is now available to us, I don't want to suggest that we could all just take up the technology and do wonderful things. It's not so much

that as it is the realization that there are new ways of disseminating our ideas and our research. See, I think the challenge of the academy — this is probably the last thing I'll say then for today, Ted, because one thing that I'll be, and just before I say this one last thing, I'll say that one of the things I enjoyed so much when listening to your podcast was your voice. [Agreement from ANTHONY.] There was a lovely meditative way in which you were presenting. And so that's uniquely yours, right? And I wouldn't expect everybody's podcast to have that sound. See, and so it was more of the meditative "I'm a jazz-like, kind of late-night, certain radio hosts and so on on CBC." And so there was all that going, right? And that was quite lovely. And I've forgotten my last comment. I probably should...

ANTHONY: Challenge. Big challenge. Big challenge of the academy.

CARL: Oh, the big challenge for me with the academy is that we have now constructed what I think is largely a hermetic culture so that we now write our stuff to please a small coterie of people who will hopefully give us positive reviews and who will then in turn contribute to our promotions, our getting merit, and whatever. And I think that as academics in this wonderfully privileged calling of the scholar, I think we're losing track of our responsibility to get ideas out into the world, and so the notion of the public intellectual. The notion of the scholar who actually speaks to journalists.

TED: Here's the perfect example of the public intellectual and maybe how universities have lost sight of that bigger vision that, to the public to which we are accountable. I'm here today because I came over last night to see David Suzuki's finale for his Blue Dot Tour, and what an *amazing* collection of individuals he brought together to advance his message of "let's enshrine protection for air, water, living things in the Constitution." So we heard academics. We listened and watched Robert Bateman. We listened to musicians. We listened to lawyers. We listened to First Nations people. Everybody with something to say, everyone with a different modality...

ANTHONY: There you go.

TED: ...bringing diversity to the issue and it was just... and I can't think of a more famous public intellectual than David Suzuki.

CARL: And so, that's perfect. See, that's exactly the kind of creative scholarship that created scholarly social activism that I think we should be focusing on.

ANTHONY: It's surprising how locked in we are to a single model of knowledge-making and knowledge-creation that's the scientific model — which is a very good one; I happen to think that the scientific method is one of the greatest of human inventions — but it's just one way of coming to know and it just holds over us such power so that something like that, by some people wouldn't be considered intellectual work at all, I mean, "they are musicians for God's sake, it's not a show." [Laughter.] It's stunning to me how narrow-minded...

TED: But that's how we change the world is by bringing all of that together. And even David Suzuki, last night, said the science is behind us. We know now and he went through it and talked about the impact of DDT. Didn't know but now the science tells us. We know the impact of climate change. We didn't know but now the science has told us. So he's a scientist in every sense of the word. But it's getting it out in forms that are digestible.

ANTHONY: Data don't speak for themselves. They have got to be picked up and championed.

TED: Yes. Okay, well thank you both.

[Pleasantries exchanged.]

TED: Well who knows? Depending on where Teresa and Anila take this, maybe there's a space within CSSE[9] or we couldn't call it a journal but a sort of educational equivalent to TED Talks, where everybody drops in what they have to.

NOTES

1. American Educational Research Association
2. Canadian Broadcasting Corporation
3. National Public Radio
4. See Mason. J. (2002). *From Gutenberg's galaxy to cyberspace: The transforming power of electronic hypertext*. Toronto, ON: CITD Press.
5. See Hussey, C. (1999). *Of swans, the wind and H.D: An epistolary portrait of the poetic process* (Unpublished doctoral dissertation). McGill University, Montreal, QC.
6. Language & Literacy Education
7. University of Victoria
8. University of British Columbia
9. Canadian Society for the Study of Education

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