Light
ON TEACHING

FEATURE ARTICLE:

Aboriginal Ways of Knowing and Learning

by Michelle Hogue

ALSO INSIDE:

Roads Worth Travelling: Liberal Education and Embodied Teaching and Learning

Arts in Action: Liberal Education Gets Creative and Inclusive

Teaching
CENTRE

CONTENTS

Light
ON TEACHING

Director's Message

by David Hinger

Welcome to the third annual publication of the Teaching Centre's "A Light on Teaching" magazine. It has been another great year for the Teaching Centre, and our continued success would not be possible without the support and hard work of the staff, faculty, teaching fellows, and Board of Governors teaching chairs who make everything we do possible. This year brought some exciting new initiatives and saw the maturation of a few ongoing ones that I am very proud of.

Dr. Sheila McManus initiated a new "Doors Open" series, in which faculty and instructors from across campus opened their classrooms for colleagues to drop in and quietly observe some of our campus's great teachers. She convinced 22 brave individuals from a cross section of disciplines to put their teaching on display for others to observe, learn, and think about. The success of this initiative was overwhelming and speaks to the culture of teaching excellence that continues to grow and mature at the University of Lethbridge.

In May the Teaching Centre hosted the first University of Lethbridge teaching symposium. SPARK, as it was titled for this year, built on the success of our annual Teaching Day as an opportunity for faculty and instructors to connect with colleagues and discover new ideas, strategies, resources, and tools designed to enhance teaching. The inaugural event was an overwhelming success; it opened with a keynote address by Dr. Andrew Hakin, and featured 16 sessions from U of L faculty and instructors from a variety of disciplines. The attendance of 99 people from across campus attests to the passion and commitment of our faculty and instructors to the enhancement of teaching excellence at the U of L.

The Instructional Skills Workshop (ISW) continues to be a driver for supporting teaching development and creating a culture of teaching and learning at the U of L. The ISW program reached a major milestone this August when Dr. Sheila McManus and Dr. Robin Bright facilitated our first in-house Facilitators Development Workshop, certifying five new ISW facilitators. This signifies the ISW program can be sustained and continue to grow completely utilizing in-house U of L faculty and instructors. The success

of this program would not be possible without the leadership and passion the ISW facilitators bring. They volunteer countless hours to continue to improve the ISW and provide a high-quality teaching development experience for their peers.

This year the U of L initiated an important revitalization of Liberal Education. The theme of this year's magazine is dedicated to liberal education to show our support for this important reaffirmation of our values as an institution. As an alumnus of the U of L, I can attest to the value of a liberal education and how important it has been in preparing me for many challenges and opportunities in life. I hope you enjoy reading the articles in this year's magazine as much as I did, and hopefully they will spark further discussion into how liberal education can support your teaching and learning goals.

Liberal Education
at the UofL

by Shelly Wismath

Shelly is a professor in the Liberal Education Department, a former Board of Governors Teaching Chair, as well as a past Distinguished Teaching Award-winner.

What is liberal education? Although it was the founding philosophy of the University of Lethbridge and has been a community tradition ever since, with our move to comprehensive institution status we have perhaps lost some of our focus on liberal education in recent years. The Liberal Education Revitalization Team (LERT) was formed in 2013 to renew our commitment, and has met with various groups of students, alumni, faculty, administrators, advisors, and other support staff to develop an ongoing vision for liberal education at the U of L. LERT has now been charged with promoting that vision to our faculty and students and to our wider community.

The philosophy of liberal education goes back to the Classical Greek empire. The name comes from the Latin word "liber" meaning free, and a liberal education was the education that a free person (as opposed to a slave) was given in order to participate in the running of society. Today we think of a liberal education as one that liberates the mind, an education that liberates us "from the bondage of habit and custom" (Nussbaum, 1997).

A liberal education at the U of L encompasses four aspects or pillars: breadth, connections, thinking skills, and citizenship. Breadth refers to knowledge across disciplines, to learning outside of one's comfort zone in order to become familiar with multiple ways of viewing the world. This breadth of approach then should be integrated and connected so that we can view complex issues from multiple perspectives. Thinking skills refers to critical and creative thinking, to problem solving and communication. Critical thinking does not mean simply criticizing: it means formulating good questions, unpacking assumptions and biases, collecting data and evidence, using both evidence and reasoning to reach conclusions, and being able to communicate and defend those conclusions. These skills make a liberally educated person a careful consumer and an engaged citizen. We are all part of many communities, from the local to the global level, and our goal as liberally educated citizens should be to make our communities better. This involves stepping beyond our own narrow views and self-interest in order to make careful decisions that promote the common good. Our University's motto of "Fiat Lux" exhorts us to shine the light of knowledge to ameliorate the world around us.

There are many models of liberal education offered at various universities and colleges;

the U of L is unique in offering a model that integrates these four pillars. These pillars of liberal education are relevant across all areas of study at the U of L, from sciences to fine arts to professional schools. Students in the sciences learn critical thinking skills and evidence-based reasoning; they learn to observe data and hypothesize patterns, to test their hypotheses, to formulate new questions as they answer previous ones. In the fine arts, students critique the status quo, challenge assumptions and stereotypes, and create new ways of understanding ourselves and our world. Our teachers and our business leaders need these skills, as well as the skills of teamwork and communication. When we consider the huge issues facing the citizens of the world today - global climate change, Ebola, poverty, fracking, to name a few - the need for engaged and broadly educated citizens is obvious.

There are many ways students at the U of L can access a liberal education, with the General Liberal Education Requirement (GLER) being only a starting point. The Liberal Education Program in Arts and Science offers a variety of designated Liberal Education courses, from introductory courses on knowledge and identity, courses on quantitative reasoning and problem solving, to seminar courses on provocative themes and a capstone seminar. The Arts and Science Global Citizenship program will be offered to a pilot cohort of students in 2015-16, using courses from Geography, Anthropology, and History connected via two Liberal Education courses. There are a number of new minors available to students, and a new Individualized Multidisciplinary Major on Social Justice is being planned. A new connection with Volunteer Lethbridge will allow students to put their skills to practical use and to build connections in our community. The Agility program will provide funding and resources to students to encourage creative and entrepreneurial work.

Ken Kay (2010) describes the skills needed of our students in the 21st century: critical thinking and problem solving, communication and collaboration, creativity and innovation. These are the skills of a liberal education, and it is the responsibility of the university community to facilitate the development of these skills in our students. This does not necessarily mean drastically changing the way we teach or redesigning all our courses or programs. Rather, it means that we as teachers should be conscious of, and articulate for our students, the goals of our liberal-education philosophy. Our students certainly see the breadth pillar, in the GLER that encourages them to take courses from a variety of disciplines. But this is the only pillar that is institutionally mandated, and it is the job of the university community to expose students to the other pillars and help them realize the full potential of a liberal education. We should work in our courses to make connections

across disciplines, and to make explicit the various points of view and approaches needed to address complex issues. We should also articulate to students the skills they are learning in our courses, and how those skills can be practiced and transferred to other academic and real-world areas. Too frequently we assume that because we are modelling critical thinking for our students they are developing their own critical-thinking skills, but research has shown the importance of making such skills and their practice explicit for students (van Gelder, 2005). Finally, we can show students how those connections and skills can be used to make our world a better place. For a liberal education is one that liberates us "from the bondage of habit and custom, producing people who can function with sensitivity and alertness as citizens of the whole world" (Nussbaum, 1997).

More information on liberal education, and on the work of the Liberal Education Revitalization Team, may be found in the Faculty and Staff tab at http://www.uleth.ca/artsci/liberal-education

References

Kay, K. (2010). 21st century skills: Why they matter, what they are, and how we get there. In J. Bellanca and R. Brandt (Eds.), *21st Century skills: Rethinking how students learn*. Bloomington, IN: Learning Tree.

Nussbaum, M. C. (1997). *Cultivating humanity: A classical defense of reform in liberal education.* Cambridge, MA: Cambridge University Press.

van Gelder, T. (2005). Teaching critical thinking: Some lessons from cognitive science. *College Teaching, 53*(1), 41-46.

A classroom as big as the Great Outdoors

Integrating Field Trips into University Courses

by Dr. Stewart Rood
and Samuel Woodman

Stewart is a professor of Biology and Environmental Science,   and Samuel is a 2015 B.Sc. graduate in Environmental Science

While most university course work involves traditional approaches such as lectures, textbook study, and classroom discussion, experiential learning provides a rich complement to post-secondary education. This can include aspects such as classroom simulations or case studies, and laboratory activities, which are common in the natural sciences. Field trips can provide valued experiential components but these are limited at the University of Lethbridge

(U of L) and are generally declining in North America (Greene et al., 2014). Field trips can expose students to natural and artificial features and processes, and provide glimpses into the intrigue and complexity of the world around us. These often provide a less scripted learning experience that can deeply engage some students and prompt integrative interpretation (Krepel & DuVall, 1981).

Field trips have traditionally been more common in some university disciplines such as biology, geography, and environmental science, and in these fields, their education and training values are well-established (Kent et al., 1997; Lei, 2010). The field work experience also contributes to employability within these disciplines. Field trips have also been used effectively to complement other university courses, including those in the fine arts, social sciences, and humanities (Jakubowski, 2003; Scarce, 1997). Off-campus field trips may be particularly suitable for multidisciplinary study and thus complement and apply liberal education.

As an example, the U of L capstone course in Environmental Science, River Science, involves multiple field trips to regional rivers. A trip upstream along the Oldman River to the Oldman Dam offers observations and insights into river and floodplain geomorphology, hydrology, and ecology, and also incorporates aspects related to the precedent-setting human dimensions. The controversial Oldman River Dam Project provoked political consideration of federal versus provincial jurisdiction that advanced to the Supreme Court of Canada. The project revealed alternative perspectives and priorities of some rural, urban, environmental, and First Nations groups, and management reveals foundational aspects of water resource policy

such as the historic precedence of water rights by seniority, "first in time = first in right." All of these aspects could be described in classroom presentations but the field observations at the actual locations enrich the experience and fortify the understanding and appreciation (Lei, 2010).

Field trips have long been used in university courses and there have been many analyses of their implementation and educational value. There have been research papers, special journal issues such as the March 2006 *Journal of Geoscience Education*, and even devoted journals such as the *Journal of Experiential Education*. Within this literature, a common question has been, "Does it work? Do field trips enrich the learning?" Studies have typically contrasted course deliveries with or without field trips and confirm the benefits through both content examination and student assessments (Fuller, 2006; Gottfried, 1980). The research studies have generally been short-term and it is likely that longer-term benefits could further increase. Student recollection of most university lectures fades quickly while memories from field trips are likely to be more enduring (Kent et al., 1997).

If field trips clearly enrich the university education, why aren't they more common? Extending from the assessment of Orion (1993) we believe that there are three primary barriers:

1. *Unfamiliarity* – University instructors may model their courses after their own university program, which may have had limited field trips.

2. *Complexity* – It is more difficult to develop and implement a field-trip program than a conventional sequence of lectures and in-class activities.

3. *Responsibility* – There are slight risks, and the associated responsibilities with the implementation of off-campus field trips may discourage adoption.

If field trips are considered worthwhile at the U of L, there could be responses to each barrier. Relative to Unfamiliarity, there are various U of L instructors who have effectively incorporated field trips into their courses and they can provide recommendations and mentorship relative to the strategies and organization, as well as assisting with the paperwork for approval. Experienced instructors may be interested in sharing a course with field trips, or even blending field trips across different courses, providing an interdisciplinary experience. The barrier of Complexity will persist but, as with other course additions, the initial time investment is increasingly worthwhile for courses that are repeatedly offered. For implementation, field trips may be phased in after a course is underway and the instructor has better insight into the nature of the content and the possible field-trip opportunities. If collectively valued, field trips could be encouraged and facilitated by departments or Faculties, and might even be required, as is the case for the BSc in Environmental Science and in Geography.

The barrier of Responsibility provides a challenge and an opportunity at the U of L. There have been field trips since the U of L's commencement, initially with limited University policies. These advanced with relatively few mishaps, typically involving vehicle travel. With growing concern about risk and litigation, the U of L implemented a formal fieldwork policy about 15 years ago and the key document is *Risk Management for Off-Campus Student Field Work* and particularly, *Part 1. Guiding Principles*. Unfortunately, this policy discourages field trips since all eleven principles refer to risk, without any recognition of the learning enrichment. This is not typical as field-trip policies are posted online for many Canadian and American universities and almost all commence with a strong positive statement that recognizes the educational value. We recommend revision of the U of L policy to commence with a clear positive statement that identifies benefits and encourages adoption.

Additionally, in the U of L policy, the first principle seems misdirected: *1. The course instructor or employee responsible for planning an off-campus student activity is the person primarily responsible for the safety of participants.* This exaggerates the responsibility of the instructor and deserves revision. Just as surely as we expect our students to act maturely and pay attention to any hazards on campus or in our broader community, we should expect that university students will be attentive to possible risks during field trips. Subsequently, the River Science course outline provides an extension: *For the off-campus field trips, the U of L policy will apply (pdf provided). To clarify Principle 1, it is considered that Environmental Science 4000 students are adults and sufficiently mature to assume some responsibility for their own actions and safety. The success of the field trips is the shared responsibility of all participants, and you must pay attention to prospective hazards to yourself and to others in the class.*

Appropriately, the U of L policy requires that instructors undertake preparation to minimize the field-trip risks, and these arrangements are assessed by the experts in Risk and Safety Services. The instructor may have better familiarity with some unusual risks, and consultation with RSS seeks to minimize these. However, there are likely to be even more common risks that are shared on- and off-campus, including aspects such as health and medical conditions of individual students, or issues of student misbehaviour. And just as instructors should expect the U of L to provide support in the rare event of a mishap within the classroom, instructors should similarly expect support from the University following an unfortunate event that might occur during a field trip. If, not too hypothetically, a light fixture were to fall on a U of L student, it would not be the course instructor who would be primarily responsible, whether this occurred in-class, in the library, or on a field trip.

Field trips do require additional work and some additional expense, and rather than seeking to expand these off-campus activities, some might advocate alternatives. One proposed approach has been virtual field trips (VFT), whereby slides, videos, or even 3-D simulations are developed to allow students to "visit" various locations. There have been many initiatives worldwide, and even some very costly "holodeck" labs. Subsequent research comparisons of VFT versus real field trips have indicated that the virtual experience doesn't match the real field trip relative to either the learning outcome or student preference (Spicer & Stratford, 2001; Stainfield et al., 2000). Conversely, VFT can complement real field trips, and contribute to the preparation of students for the real trip, or for reviewing the features and concepts after the trip (Spicer & Stratford, 2001).

This complementation between field trips and other activities also applies to other course components. Thus, illustrated lectures may precede field trips to introduce some primary concepts and display some features. Classroom discussions typically follow the field trips, as the students work to integrate the observations from the trips into the broader course content. To assist with this debriefing, we encourage students and instructors to take photographs, as these provide records and reminders, and can also be useful for examination.

The blending of field trips and laboratory activities can also be very effective. For example, samples or data may be collected during the field trip and then analyzed in the lab component (Hefferan et al., 2002). This framework is effectively applied at the U of L in courses such as Cam Goater's Field Biology course, which allows students to plan and conduct their own studies as part of a week-long field trip prior to the course semester. Although simulations or hypothetical experiments could be undertaken in the classroom, the opportunities to critically approach and solve real-world questions provide invaluable experience (Kent et al., 1997).

The deliberate blending and integration with other course components represents a theme relative to the successful learning enrichment from field trips, as is also the case for laboratory activities. Thus, lectures and discussions before and after the field trips or labs should reinforce the key principles and position the experiential activities within the broader learning content.

Interestingly, some studies have indicated that an intermediate degree of novelty is most effective for field trips, and that sites that are too foreign to the students are less readily absorbed. This supports the concept of intermediate "novelty space" or "familiarity index" (Orion & Hofstein, 1994). This is broadly applicable in university education as students master content somewhat incrementally, encouraging the progressive advancement of content complexity through sequential courses and the reinforcement and development through a blending of lectures, discussions, tutorials, labs, and field trips. Diversity is a key theme of liberal education and this should include not only curricular content, but also the instructional approach.

Finally, aspects related to intermediate familiarity, combined with some of the costs and challenges of off-campus travel, have led Lei (2010) to encourage less exotic field trips. Lei's review of the benefits and drawbacks of biology and ecology field trips for college and university courses led to the conclusion that local field trips can retain many of the benefits of more distant trips, while reducing the complexity. Consequently, we suggest that instructors initially consider adding short and local field trips to complement their courses, and as the mechanics and outcomes are explored, the field trips might become longer in duration and more distant in location. Good luck!

References

(This contribution follows from discussions with Geographer Rene Barendregt, Biologist Cam Goater, and Education faculty Keith Roscoe and the late Rick Mrazek.)

Fuller, I. C. (2006). What is the value of fieldwork? Answers from New Zealand using two contrasting undergraduate physical geography field trips. *New Zealand Geographer, 62,* 215-220.

Gottfried, J. (1980). Do children learn on school field trips? *Curator: The Museum Journal, 23,* 165-174.

Greene, J. P., Kisida, B., & Bowen, D. H. (2014). The educational value of field trips. *Education Next 14*(1).

Hefferan, K. P., Heywood, N. C., & Ritter, M. E. (2002). Integrating field trips and classroom learning into a capstone undergraduate research experience. *Journal of Geography, 101,* 183-190.

Jakubowski, L. M. (2003). Beyond book learning: Cultivating the pedagogy of experience through field trips. *Journal of Experiential Education, 26,* 24-33.

Kent, M., Gilbertson, D. D., & Hunt, C. O. (1997). Fieldwork in geography teaching: A critical review of the literature and approaches. *Journal of Geography in Higher Education, 21,* 313-332.

Krepel, W. J., & DuVall, C. R. (1981). *Field trips: A guide for planning and conducting educational experiences.* Analysis and Action Series. NEA Distribution Center, The Academic Building, Saw Mill Rd., West Haven, CN 06515

Lei, S. A. (2010). Field trips in college biology and ecology courses: Revisiting benefits and drawbacks. *Journal of Instructional Psychology, 37,* 42.

Orion, N. (1993). A model for the development and implementation of field trips as an integral part of the science curriculum. *School Science and Mathematics, 93,* 325-331.

Orion, N., & Hofstein, A. (1994). Factors that influence learning during a scientific field trip in a natural environment. *Journal of Research in Science Teaching, 31,* 1097-1119.

Scarce, R. (1997). Field trips as short-term experiential education. *Teaching Sociology*, 219-226.

Spicer, J. I., & Stratford, J. (2001). Student perceptions of a virtual field trip to replace a real field trip. *Journal of Computer Assisted Learning, 17*, 345-354.

Stainfield, J., Fisher, P., Ford, B., & Solem, M. (2000). International virtual field trips: a new direction? *Journal of Geography in Higher Education, 24,* 255-262.

Trop, J. M., Krockover, G. H., & Ridgway, K. D. (2000). Integration of field observations with laboratory modeling for understanding hydrologic processes in an undergraduate earth-science course. *Journal of Geoscience Education, 48,* 514-520.

HOW OUR TEACHING ASSISTANT DUTIES turned into a Valuable TEACHING & LEARNING EXPERIENCE

By Vanja Spiric and Kayla Ueland

Vanja Spiric is a second-year student in an Individualized Multidisciplinary Master of Arts with a concentration in Sociology. She received an MA in Philosophy and an MA in Social Policy from University of Belgrade, Serbia. She has held two full-year teaching assistantships at the University of Lethbridge.

Kayla Ueland is a first-year student in a Masters' of Arts in Sociology. She has held teaching assistantships through the University of Lethbridge and the University of Calgary.

This year, we were given, from our perspective, a unique and exceptional opportunity as teaching assistants (TAs). We would like to share this experience to encourage the use, whether partially or fully, of the model we are going to describe. This model has two key components that we would advocate for as essential to the growth and development of TAs' teaching skills: first, a supportive instructor who encourages the deep involvement of a TA in their course development and delivery, and second, a team approach to teaching, whether it be between instructor and TA or between two TAs. We hope that our reflections on our active involvement in teaching will inspire other instructors and graduate students to build their professional relationships toward the development of an engaging TA role. The University of Lethbridge, with a relatively small pool of graduate students within small departments, is a perfect environment to build these professional relationships and allow graduate students to benefit from close working relationships.

In our previous experience as TAs, we have been assigned duties that consist of a mixture of tasks such as marking, leading tutorials, holding office hours, or delivering one guest lecture. Many of the tasks that have previously been assigned to us as TAs have been quite limiting in the way that we were able to learn teaching skills because the tasks were fragmented and we rarely completed tasks independently. At times, for

example, we were given marking duties that did not facilitate the connection of course material to exam questions. These marking duties were assigned through marking rubrics that included the "correct" answers conceptualized and understood by the instructor, but not necessarily by us since we were not always required to attend lectures or read the lecture materials. The unique experience that we will describe below differs from these previous experiences in that we were highly integrated into both the development and delivery of a course, which provided us with valuable insights into how to teach a course.

For two semesters we worked together as a team with one instructor to prepare and deliver a course. In the fall semester, a course instructor invited us to meet to discuss the design and delivery of a sociology course. The instructor had not taught this course in a while and she solicited advice from us regarding how difficult, relevant, and interesting the content was. We were asked to review the material she had used in the past by commenting on the level of difficulty and relevance of supplemental articles. While we were contributing in this way to the course content, we were also taught how to design a course, what the challenges had been in previous years of teaching it, and what we could expect in terms of class discussion and student engagement. From the first meeting this experience seemed different from our previous TA duties: we were involved in the very design of the course, we were watching the course develop, and we had a say in its contents.

After the first general meetings about course content and objectives, we began working on our own one-week series of three lectures that we were to deliver the following semester. We completed many tasks in order to prepare for these lectures (as we are sure you may understand), but the main emphasis was on creating lectures based on our content and preferences, with the guidance of the course instructor when needed. For example, we were to gather our own additional materials (such as blogs, statistical data, videos, movies, websites, articles, or policies), devise our own PowerPoint, and create our own class activity that involved a real-world application of our lecture content. We were the creators of our own lectures, and while there were suggestions to revise some material, it was always our final decision to cover certain materials or topics. We believe that it was invaluable to have the course instructor available for feedback while we developed these materials, as she often brought up suggestions that we as inexperienced teachers would never think of. For example, once we were certain that we had a clear direction for our lectures, we were encouraged to think about testable questions and to build answers to these questions into our lecture outline. This helped us focus our lectures and helped us connect how content, exams, and lectures should fit

together. To solidify this connection, we were also asked to create relevant exam questions. To help us develop these questions, we were given the instructor's previous exams as a template. In addition, we were also required to make a comprehensive study guide with answers for the course tutorial so that students could prepare for the exam.

We were well received by students in and outside of the classroom during and after our one week of lectures. Students seemed responsive to our materials, which was incredibly encouraging. While we got to experience some of the favourable aspects of teaching, such as the adrenalin associated with delivering a lesson and the positive feedback from students, we also experienced some of the challenging aspects of teaching, such as the amount of time needed for proper lesson planning. As we indicated above, we were involved in every component of the teaching process: the design of an outline and course planning, lecturing, assessment, and marking. With this experience, we did not become experts in teaching, nor did we master any of these components. Rather, we had an opportunity to participate in every component of delivering a course and acquired a good general idea of what it takes to put a course together and how different course elements depend on each other.

This learning experience would not have been possible if the course instructor had not initiated and supported our deep involvement in the teaching process. We were lucky enough to be able to take advantage of this close working relationship with a faculty member, where we benefited from her insights and gained first-hand experience. She dedicated time, energy, and resources toward empowering us as teachers and mentoring us throughout the process. The support she provided was invaluable, especially in terms of being forthright when reflecting on her teaching experience. While we are aware that we all have different personalities with distinct communication styles and interests, our course instructor offered us her view on classroom dynamics and strategies to cope with possible challenges in the classroom. It is also important to acknowledge that even though we were engaged in all of the sections of the course, all of these tasks were completed with her support: she initiated meetings, she was always available for consultations, she attended our lectures, and she provided comments for discussion during class. In this way, through her mentoring and support, we were introduced to the profession of teaching through a teaching model that greatly resembles an apprenticeship.

While we found the feedback from the course instructor vital to our teaching development, we found the peer support we received from each other equally valuable. As luck would have it, we shared the same office and often asked each other for feedback on individual tasks.

From the very beginning we gave each other feedback on our selection of materials. We sat in on each other's lectures and we collaborated throughout the marking processes. The fact that we are both graduate students allowed us to provide each other with more informal and immediate feedback. While we were relying on each other for support and encouragement, we were also actively learning from each other. Throughout the last two semesters we have been reflecting on what this experience has meant for our development as teachers and this reflexive thinking was the initial spark to ignite our discussions about the overall role of TAs.

The position of a TA is one that carries an ambiguous status – are the TAs there to support student learning outside of class (e.g., leading tutorials, holding office hours), or are they there to directly assist instructors in conducting a course? This liminal position, where graduate students are often bridging the communication between instructor and students, can place graduate students in an unfavourable situation where it appears that they exist solely for the sake of assisting others in their tasks. At the same time, however, this role is often held by individuals who are very passionate about their research and who may be aspiring to become teachers themselves. Accordingly, we believe that TAs should be recognized as future academics and teachers, and that universities in their role as *teaching* institutions should ensure that graduate students have an opportunity to gain practical, hands-on experience as teachers. In theory, this experience would better equip graduate students with the skills to step into a classroom with confidence and composure, awaiting that adrenaline rush, while still well aware of the necessary work required to plan, prepare, and deliver a course.

We acknowledge that this model requires considerable engagement of all parties involved, but we believe that the benefits are worthwhile. Not only would graduate students leave the university with more practical teaching experience and confidence in their teaching abilities, but this model also has the potential to train first-year graduate students to be able to take on more responsible and complex roles in subsequent years. The current system, as we understand it, operates on the assumption that TAs are generally assigned various individual duties often under the supervision of one changing faculty member. Our unique experience, we suggest, indicates the advantages of teamwork to produce encouraging, supportive, and educationally productive relationships.

WHAT WE HAVE LEARNED...

How to budget time for a 50-minute lecture

How to integrate relevant real-world experiences into lecture materials

How to thoughtfully engage students in the classroom

How to balance between textbook and supplemental materials

How to emphasize important points during lectures.

How to cover exam questions during lectures

How to decide the length of an exam

How to decide the composition or type of questions to include on an exam

How to create testable questions

Roads Worth Travelling

Liberal Education and Embodied Teaching & Learning

by Jesse Couture, Carly Adams, and Jason Laurendeau

Proem

Almost every day, on my way into our university's library building, I walk past the sign.

I am still learning

Four words. Infinite possibility…. What is education? At our university, the concept of liberal education is central to the institutional teaching philosophy and pedagogical practices. However, I often wonder whether and how our physical bodies and embodied selves are a part of this experience. Are we just docile bodies, jumping through a series of institutionally mandated "hoops"?

Introduction

The three of us – two early-career professors and a University of Lethbridge alumnus and current U of L graduate student – have spent many hours pondering what liberal education *means* for us and at the U of L. Prompted by Jesse's reflections in the proem and by our individual wranglings with and collective conversations about liberal education, we engage here with selected "threads" within the liberal-education framework. In so doing, we aim to forefront embodiment and critical pedagogy, explore liberal education from teacher and student perspectives, and broaden the notion of teaching from what too often "counts" as teaching.

The U of L, we are told, is "founded on the principles of liberal education" (see, for example, http://www.uleth.ca/president/, accessed April 21, 2015). Yet, based on numerous in-class discussions, we sense that few students in our classrooms understand what liberal education *is,* apart from a requirement that they take a certain number of courses from a set of lists. This is perhaps understandable, as the *principles* of liberal education are too often only waved at in official University publications, rather than explicitly articulated. This is troubling, as some of the most important figures in thinking about the idea of liberal education have expressed serious reservations about simple exposure to a range of courses and disciplines as a proxy for liberal education (see Nolan, 2012).

Following Newman, we understand liberal education as "the cultivation of the intellect … to open the mind … to refine it, to enable it to know, and to digest, master, rule, and use its knowledge…" (2009, cited by Nolan, 2012, p. 110). One result of this, Northrop Frye (2000) suggests, is to achieve a "neurotic maladjustment" in our students, leaving them "very dissatisfied with the world, very finicky about accepting what it offers [them], and yet unable to leave it alone." It is with this neurotic maladjustment – shared, we would suggest, between faculty and students – in mind that we enter the discussion that follows.

One of our central aims in this essay is to explore "the conceptual   linkages between embodied ways of knowing, lived experiences, performance, and bodily intelligence" (Wilcox, 2009, p. 105). We examine how particular embodied research and teaching acts illustrate the value of considering *moving* bodies as sites of epistemological, social, political, and corporeal inquiry.

[We are] thinking more deeply about liberal education, not simply as an institutional hallmark, but as a set of principles that underlie our pedagogical commitments and choices.

We approach this discussion embracing messiness – both the messiness of teaching and research, and of the process of thinking and writing about liberal education and pedagogical practices (Avner, Bridel, Eales, Glen, & Peers, 2014; Law, 2004). To that end, we employ multivocality and evocative writing as we situate specific teaching and learning experiences outside of the classroom within the liberal education framework. We do not aim, then, for a "coherent" narrative about embodied pedagogy.

Rather, we hope to sketch out some important spaces of *not knowing* in the hopes of provoking others (as we ourselves have been provoked) to imagine themselves and their teaching and learning practices differently (Avner et al., 2014). This has been a collaborative process, one that we see as extending into the act of reading, as we encourage (and trust) imaginative readers to engage with our "messy" thoughts, allowing their own "lines of flight" (Deleuze & Guattari, 1987) to develop with respect to their own teaching and learning practices.

Embodied Teaching and Learning

Jason: We would be remiss if we did not acknowledge that this represents a relatively recent commitment for Carly and me. A conversation at a recent conference encouraged us to (re)consider our teaching practices (in the broadest sense of the term), and, to adapt from Wilcox, prompted us to actively seek out opportunities to engage our students' "multiple intelligences and [cultivate] trust through embodied interaction" (2009, p. 107). According to Wilcox, one key in this process is to develop alternative models of knowledge production that challenge the interconnected dualisms and hierarchies (mind/body, male/female, white/other), and that recognize the body's capacity to know (2009, p. 106; also see Grosz, 1994).

We imagine this contribution to be part of a "radically embodied project" in which "active, agentive human bodies (and their fleshy politics) are engaged through sometimes messy, sometimes difficult, sometimes dangerous points of corporeal contact" (Giardina & Newman, 2011, p. 180). In this essay, we aim to highlight those "points of corporeal contact" *between students and instructors.*

Jesse: Since January 2012 I have worked with Carly as a research assistant on a project centred on a high-performance hockey school in the town of Warner, Alberta. During the summer of 2012, at the suggestion of Carly, I also took an independent study course on theorizing masculinities with Jay. I have taken other courses with both of them, but for the purposes of this piece, I would like to share one brief moment from each of these particular experiences, beginning with my work with Carly.

Warner I

The moment I walk through the door, her warm, welcoming smile greets me. "Hi, Jesse, come on in," she says. "Please, have a seat." Smiling faces and picturesque landscapes on the walls decorate a space and place inherently influenced by underlying (unequal) relations of power and authority.

As part of our conversation about the research I'm working on for her, Carly says, "I don't know

if this is something you'd be interested in doing, but I'm planning a trip to Warner, probably early next month. You're welcome to come along and, you know, experience the town, the people, and, really make some connections with what you've been reading and researching."

"I've actually arranged a couple of interviews during the day," she continues. Her eyes widen ever so slightly as she pauses; I can't quite tell, though, if it's a look of genuine excitement or subtle irony: "I've even been invited out to lunch on a cattle ranch for one of them."

"Cattle ranch"… the words repeat themselves in my head and I start to really imagine this place: the sounds, the smells, the people." [1]

I smile.

Carly: Prior to hiring Jesse, I had employed student researchers in very specific ways to undertake admittedly often-mundane tasks such as transcribing interviews. This was the first time I had taken a student with me into the field and considered the implications for this type of engagement outside of the classroom. Once I made the decision to invite Jesse to join me in Warner I was riddled with anxiety about how it would go, what my responsibilities were as the "team leader," what teaching outside of the classroom would look like, how Jesse would respond and engage with the people we would meet.

As employers and as teachers, we are embedded in, and privileged by, multiple layers of power relations; in order to serve the interests of our students and research assistants, we must acknowledge and address these various layers. Immersed in this project and influenced by the work of Avery Gordon (2008), I had come to see my "self" as an affectual subject located as part of an extremely complicated past, present, and future. As I move throughout the school and the community (attending hockey games, showcase camps, and potluck dinners at the school, for example), I often feel haunted by legacies of the women's game and the historical challenges, tensions, and triumphs of women's sport. What will *Jesse* feel and experience?

Jesse: Midway through the day, we approach the cattle ranch; we drive slowly down the dusty dirt driveway and pull up to the quaint little house. A tall border of trees and shrubs mark the perimeter of the yard, a natural defense against the region's Chinook winds. Exhaling deeply one last time, I open the car door and step out into the sunshine. I stand, stiffly, at the front door, heart racing, wondering if I "belong." I look nothing like people here; I look, I realize, like an academic.

I am more nervous than I thought I'd be.... She's been here before.

This is all so new to me.... She's been here before.

"Hiiiii!" The door swings open to reveal a warm and welcoming middle-aged woman. Her gray hair is styled short and her long earrings have been colour-coordinated with her blazer. She reminds me of my late grandmother.

"Hi! How are you?!" says Carly, "It's so good to see you." Their shared hug suggests a level of familiarity that somehow suddenly makes things feel less intimidating.

"Linda, this is Jesse; Jesse, this is Linda."[2]

"Hi, Jesse. Welcome!" Her sincerity is unmistakable and, before I even have the chance to reply, I, too, am being enveloped in a warm hug.

Whoa. From the other side of the door, I imagined this interaction going very differently. Maybe I don't look as out of place as I thought. Either way, I clearly look "huggable." This is good.

Following brief introductions, we move into the adjacent living room, adorned with dated but well-preserved western décor. I find myself moving slowly, carefully, self-policing at every move, ultra-conscious of the space I occupy (and the way in which I occupy it). Taking a seat on the edge of sofa, my body is still but my eyes are restless, wide-eyed, and ever-receptive.

Why do I feel so self-conscious? I mean…this should feel a bit weird, right? I am, after all, in the middle of the southern Alberta prairies, on a cattle ranch, sitting quietly on a couch in a quaint little living room of two individuals I've never met, with a professor I barely know, and we're about to have lunch. Is this what fieldwork looks like? Feels like? I don't seem to remember a section on this in my Qualitative Research Methods textbook.

"Can I get you anything, Jesse? Coffee? Tea? Juice? Water?" Linda's friendly nature radiates through her words.

"No, I'm okay for now, but thank you," I reply. I wonder what she thinks about my being here. From the privacy of the restroom, I can't help but wonder why this feels so weird. For the first time in recent memory, I find myself reflecting nostalgically on the intimate nature of a – of my – small hometown, a similarly tightly knit community interwoven with family and friends. I am at once in and out of place.

Masculinit(y/ies)

Jason: My experiences with Jesse have been rather different than Carly's, but what connects them (and does so more and more as we think and write about this) is a commitment to embodied critical pedagogy. Adapting from Kincheloe and his colleagues (2011),

we emphasize the potentials in the process of teachers considering themselves bricoleurs, those who make use of the "tools" available to them at any given moment. To adapt from these authors, we argue that: the critical [teacher]-as-bricoleur abandons the quest for some naïve concept of realism, focusing instead on the clarification of his or her position in the web of reality and the social locations of other [teachers and students] and the ways they shape the production and interpretation of knowledge (Kincheloe, McLaren, & Steinberg, 2011, p. 168). It was in this spirit that, as Jesse worked on a paper on masculinities and father/son relationships, I suggested that we could have one of our "meetings" on the bike. In part, this was driven by practical concerns (I could sneak a ride in while getting some work done). In part, though, I hoped that he (and we) might think differently, and perhaps relate differently, if we *moved* the "classroom" and *moved our bodies in* the classroom.

Jesse: I'm pretty sure I'm not imagining it. No, he definitely just said "bike ride."

Taking a couple of seconds to accommodate this unexpected proposition, I try as best I can to make sense of it.

How do I prepare for an academically based meeting on a bike? I mean, seriously, I don't even know him. I haven't so much as taken one of his classes.

For the rest of the week, time was the only thing between myself and this (yet) unknown and unfamiliar experience.
What are you so nervous about? It's a bike ride – relax.

Jason: For the rest of the week, time was the only thing between myself and this (yet) unknown and unfamiliar experience.

What are you so nervous about? It's a bike ride – relax.

Jesse: A knock on the door announces his arrival. Between my nerves and the strong coffee, my stomach was a little out of sorts. "Morning!" I say as I open the door. "Looks like a great day for a ride."

During hat first ride, we talked about the course and about masculinities as performative and constructed, as we performed and (re)constructed our own masculinities.

After the ride, I stepped in the front door, took my cleats off, and collapsed onto the couch in a quasi-successful attempt to process what had just transpired.

Excerpt from an email:

…Jesse, we need to go for [another] ride. Seriously. Both because I haven't been on the bike recently, and because there's a conversation we've been having on the bike, but haven't actually been having.

Jesse: At our next meeting, Jay says, "Okay, well, I want to give you something to chew on, pre-ride."

Here it comes. I can feel it.

He continues, telling me that we're going to climb Paradise Canyon, a short, grueling hill a few kilometres away: "So…I want you to approach the hill as a metaphor for social change. Decide how you want to ride it, and then I'll ask you to tell me why you rode it that way afterward. And don't worry about me – I've got my own assignment."

He can't be serious.

Don't over think it; let it come to you.
Let WHAT come to you? Do you even understand what he's asking of you?

Jason: I wonder if he understands what it is I've asked of him. But maybe that isn't the point. Maybe the point is to let him explore the ride, the ideas, even if it means he gets stuck. "Stuckness," after all, can be generative (Frentz, 2008).

Jesse: My lack of knowledge and experience no longer terrifies me in the same ways it once did. My excitement exceeds the uncertainty and the angst of not knowing.

Maybe I'm just becoming more at ease with not knowing - becoming more comfortable being uncomfortable.

"Hey, quick question…." Jay turns to me, smiling, as we spin toward Paradise Canyon. "Which would you say you're more comfortable with, the ascent or the descent?"

What does he want me to say right now? What is he really asking? No, what he wants me to say doesn't matter. Think about this.

"The climb," I say.

Closing in on the final stretch before dropping into the hill, Jay accelerates quickly and bombs down the hill ahead of me. Here we go.

Jason: My "assignment" was to ride the hill as a metaphor as well. Only my ride was as much about Jesse's as about my own. So I'm bolting ahead, but conserving what climbing legs I have

for the hard work to come….

Jesse: Carefully navigating the uneven curves, dips, and bumps in the pavement, I attend, fully, to my body as the rush of the speed thrills and excites me in a wildly euphoric way. As I regroup and stretch for a second at the bottom of the hill, I can't help but think what an incredible thirty seconds that was. I'm immediately brought back to the earlier question of ascent versus descent. I used to live for that rush. I used to resent the hard work of the climb because of how painful, how disheartening and just... how honest it can be.

This is interesting. When did this shift happen?

Blindsided but excited by this sense of self-understanding, I can't help but notice the smirk on my face.

Jay is up ahead as we approach the big climb, and accelerating slightly.

I don't usually start out this fast. On a good day it takes about four minutes, give or take a few seconds. I tend to approach hills with a certain level of conservatism. My typical technique is to find a nice, steady pace and hold it. Well, it doesn't look like that's in the cards today.

Jason: I'm digging in, knowing I'm going to crack soon. But not yet. I can feel Jesse's energy behind me, can feel that he's digging deep, and want to give him the benefit of "holding my wheel" for as long as I can, even knowing that it'll leave my tank empty …

Jesse: I don't know what compelled me to do it. It's not like Jay said, "Hey! Remember to climb that hill like your life depended on it."

Like a man possessed I take off up the hill. As I pass him, he yells, "GO GO GO GO GO!!"

Jason: I feel Jesse jump, and he passes me at a blistering pace. I muster all of the energy I have left to encourage him as he takes off. I've done all I can; my only job now is to drag my exhausted legs to the top.

Jesse: One pedal stroke after the other, I'm distancing myself from him. The beads of sweat trickle down from my brow, around and into my eyes, burning and blinding. I know he's behind me.

What matters is what's in front of you.

My lactate-filled legs struggle to maintain their cadence. Each breath is more difficult than the last.

Keep pushing. You've got this.

The misery in my muscles has spread to my calves, my feet, my back, but it doesn't matter. I

muster everything I've got left to climb the final stretch. At the top, I stop and turn around, in part to look for Jay, but also to just take it all in. I let my head collapse into my hands. I don't know whether to laugh, cry, or yell. I choose the latter, as Jay makes his final push for the top. I feel alive in ways I haven't felt in years. My body is spent. I taste blood. The sun shines onto my face and into my eyes, already burning from the mix of salt and sweat, as the endorphins continue to race through my body.

Three and a half minutes.

Jason: "Great climb!" I say, as I try to catch my breath, and mean it. We spin in silence for the next few minutes, gathering our strength and our thoughts before we talk about the climb as a metaphor for social change (my "lesson plan").

Warner Redux

Jesse: In the spring of 2015 Carly entrusted me to conduct some of the interviews for the Warner project on my own. Now three years (and one graduate-level seminar on Qualitative Interviewing) since our first trip out to Warner, I was comfortably terrified with the idea of conducting an interview entirely on my own.

Okay, you've seriously double-checked the address twice. It's now been quadruple-checked. How was it such a great idea, yesterday, to be here so early, today? Linda is supposed to meet me here after she gets off work and, besides, what do I possibly have to prepare that I don't already have prepared? Unless I suddenly lose the ability to talk, things should go smoothly. Something feels weird and, I don't know, it feels like something more than a "Holy shit, this is your first 'real' interview in the field"-type weird.

It's fine. You're fine. Even if you're not quite fine, let's face it, there's a pretty good chance that you will be fine. That counts for something, right?

I feel the heat of the late-afternoon southern Alberta sun on my freshly-shaved head, piercing through my window that's cracked just enough to keep a breeze circulating. I reach for another drink of water.

I don't even know if she's here yet. Should I go knock? I confirmed yesterday that we would meet at three…. I've tested the recorder, I've got paper to write on, and I've got a pen, a consent form, and an iPhone as a backup.

As I reach into my pocket for a piece of gum, in a desperate attempt to get the bitter taste of a quad-shot Americano out of my mouth (to be sure, a poor choice for a pre-interview snack),

I'm overcome with a somewhat (un)familiar feeling. Maybe it's the heat, maybe it's the slowly subsiding knot in my stomach – maybe it's the gum. Sinking into in my seat with eyes wide open, I'm taken back to the very first trip I took out to Warner, with Carly, to the ranch, and to what that experience felt like.

Standing in silent suspense, on the front step, not knowing into whose home and whose life I am about to be welcomed, there is some sense that Carly remains an absent presence (Gordon, 2008). That is, the fact that I have been afforded the opportunity to be involved in her research, in the capacities that I have, has been and continues to be an enriching educational experience. That I am able to stand here, today, as a confident and competent representative, on her behalf, and on behalf of the University more broadly, I am humbled and grateful for the level of confidence that has been placed and fostered in me as a researcher. This reflects what I have come to understand as a shared commitment to a larger "project" that, among other things, fortuitously includes my growth as an academic and as an individual.

What's more, I look forward to the next time I ride with Jay, and to being able to answer his question from three years ago with a little more confidence than before. There are parts of the process – of my process – that continue to terrify me and occasionally make me feel like I'm losing control, that require a quick adjustment (whether in body position or perspective) to find balance. Huh. Maybe *this is what they mean by a liberal education.* Maybe not. It has, to be sure, been a very *liberating* education. I am grateful that my foray into higher education has fostered a renewed interest in, and capacity for, learning.

Here we go.

Concluding Thoughts

Our emphasis on the particular nodes of corporeal contact we have considered here is rooted in our commitment to the notion that critical teachers "construct pedagogies that engage the impassioned spirit of students in ways that *move* them to learn what they do and do not know and to identify what they want to know" (Kincheloe et al., 2011, p. 163, our emphasis). Our aim in this paper is not to *privilege* the moving body, but to emphasize that one fruitful avenue of inquiry that has perhaps received too little attention in the critical pedagogy literature is the extent to which we might consider "bodies as agents of knowledge production" in an effort to transcend intellectual traditions that "privilege the mind over the body, thus suppressing bodily knowledges" (Wilcox, 2009, p. 105). Our particular consideration of embodied teaching and learning has been geared toward thinking more deeply about liberal education, not simply as an institutional

hallmark, but as a set of principles that underlie our pedagogical commitments and choices.

Critical pedagogues argue that we should "explore and attempt to interpret the learning processes that take place in [our] classrooms. 'What are its psychological, sociological, and ideological effects?'" (Kincheloe et al., 2011, p. 163). We might add to this, questioning: What are its physiological, corporeal effects, and in what ways are the latter intertwined with the former? Importantly, we do not mean to suggest that we (or others) should be pursuing the *specific kinds* of pedagogical moments we have considered here more often. These are, of course, exceptions. Further illustrating the dialogic learning process, these exceptions have led us to questions that extend well beyond the corporeal encounters themselves: What kinds of embodied knowledge (and ways of knowing) are we fostering or neglecting in our classrooms (writ large), and in what ways does this enable and/or inhibit the critical pedagogy project we have sketched above? And, perhaps more importantly, as teachers and students, how do our physical embodied "selves" construct what kinds of students and academics *we* want to be?

We return here, to come full circle, to the notion of neurotic maladjustment (Frye, 2000) as a central component of liberal education, as we conceptualize it. The process of writing this essay has *raised* more questions than it has answered. This has been an *unsettling* process for all three of us, and, we hope, for readers. It has encouraged us to (further) question our teaching and learning practices, and to reflect on what we want for and from our experiences in the classroom. It has also left us unsatisfied with institutional discussions of (or more often silences about) what liberal education means, and how we might put it into practice. These discussions are central in certain socio-spatial locations on campus (principally in the Department of Liberal Education), but too rarely does the broader university community take them up. It is our hope that with this essay we have contributed in some small way to this important dialogue.

Notes

1 Readers might think of these italicized sections as analytic memos written at various points of this project. The aim, following authors Ellis (2009) and Diversi and Henhawk (2012), is to employ polyvocality and *show* readers the process of working on/with/through ideas *throughout* the process of writing a collaborative autoethnographic project.

2 Pseudonyms have been used to protect the anonymity of the research participants.

References

Avner, Z., Bridel, W., Eales, L., Glen, N., & Peers, D. (2014). Moved to messiness: Physical activity, feelings, and transdisciplinary. *Emotion, Space and Society, 12*(1), 55-62.

Deleuze, G., & Guattari, F. (1987). *A thousand plateaus: Capitalism and schizophrenia.* London: Continuum.

Diversi, M., & Henhawk, D. (2012). Indigenous qualitative inquiry: (Re)Awakening together, from a long colonizing slumber. *International Review of Qualitative Research 5*(1), 51-72.

Ellis, C. (2009). *Revision: Autoethnographic reflections on life and work.* Walnut Creek, CA: Left Coast Press.

Frentz, T. (2008). *Trickster in tweed: My quest for quality in faculty life.* Walnut Creek, CA: Left Coast Press.

Frye, N. (2000). A liberal education. In J. O'Grady & G. French (Eds.), *Northrop Frye's writings on education, Volume 7* (pp. 40-49). Toronto: University of Toronto Press.

Giardina, M., & Newman, J. (2011). Cultural studies: Performative imperatives and bodily articulations. In N. Denzin & Y. Lincoln (Eds.), *The Sage handbook of qualitative research (4th ed.)*(pp. 179-194). Thousand Oaks: Sage.

Gordon, A. (2008). *Ghostly matters: Haunting and the sociological imagination.* Minneapolis & London: University of Minnesota Press.

Grosz, E. (1994). *Volatile bodies: Towards a corporeal feminism.* Bloomington: Indiana University Press.

Kincheloe, J., McLaren, P., & Steinberg, S. (2011). Critical pedagogy and qualitative research: Moving to the bricolage. In N. Denzin & Y. Lincoln (Eds.), *The Sage handbook of qualitative research (4th ed.)*(pp. 163-178). Thousand Oaks: Sage.

Law, J. (2004). *After method: Mess in social science research.* New York: Routledge.

Nolan, P. (2012). Internationalization and the idea of a university: The meaning of liberal education in the era of globalization. In C.

Ennew & D. Greenway (Eds.), *The globalization of higher education* (pp. 105-116).

Wilcox, H. (2009). Embodied ways of knowing, pedagogies, and social justice: Inclusive science and beyond. *NWSA Journal, 21*(2), 104-120.

COMPUTER SCIENCE
& Liberal Education

by J. E. Rice

Jackie Rice is an Associate Professor in the deparement of Mathematics and Computer Science and is currently serving as the Associate Dean of Arts and Science

In this short article I explore some of what I see to be the connections between a liberal education and the discipline of computer science at the undergraduate level. In particular I focus on my recent experiences teaching software engineering and how these experiences have highlighted connections between my course and liberal education.

Liberal education under fire? My personal experiences

I find it fascinating that as faculty at an institution whose underlying philosophy is liberal education, we constantly have to defend this philosophy. Students can't get good job training from a liberal education, we hear, and governmental funding is increasingly being directed toward areas traditionally viewed as non-liberal education (e.g., the sciences and engineering) as shown, for example, by the disparity in funding to the three national research funding groups NSERC, SSHRC, and CIHR (CAUT, 2013, p. 2). However, a quick search (via Google) for the topic "articles on liberal arts education" resulted in several pages of articles strongly in support of this philosophy, so clearly the beliefs around this are changing. My own pathway to academia was as far from what I now understand to be a liberal education as it is possible to be. I entered into a computer-science degree program as a first-year undergraduate student and was advised to take courses that were outside of my major. The reason for this (I was told) was that I would overload myself if I took too many math and computer-science courses. So I took first-year psychology in a class of 300 and spent most of my time reading and regurgitating the textbook, and nearly failed my other elective (first-year anthropology). After that I went back to the Faculty of Engineering and loaded up on every engineering elective I could find. I understood how to get good grades in those courses! However, many years later I realized that I missed out on not only an opportunity to build my knowledge in interesting new areas, but on the chance to hone my analytic skills and problem-solving approaches with new perspectives and techniques from these other areas of study. Why didn't someone suggest that language might be a useful pursuit for a computer scientist, or that sociology or women and gender studies could provide background for some of the questions and problems I might bump up against? I was an active member of the Women in Science and Engineering (WISE) group even as an undergraduate; one would think that the discussions around gender and the impacts it has on our culture would have been right up my alley. Unfortunately I didn't find my way into any of those classes, and somehow slipped through the cracks during my short exposure to anthropology. I now carry out research in several areas where a liberal-education perspective is essential, and I feel that by not pursuing a more liberal education I missed out on something that might have changed my life and certainly would have changed my early research choices.

What is a liberal education?

As I understand it, a liberal education incorporates four pillars of competencies: breadth, connections, critical thinking, and civic engagement (University of Lethbridge Liberal Education Review Team, 2014). Breadth refers to knowledge across a range of disciplines; connections includes seeing how knowledge is used in different disciplines and having multiple viewpoints from which to examine issues; critical thinking includes problem solving, logical and analytical reasoning, and being aware of one's biases and assumptions; and civic engagement incorporates a range of skills from engaging difference and transcultural understanding to an ability and interest in working toward the public good. MacKay (2013) characterizes a liberal education as "education for democracy" (p. 1) and emphasizes universality and equality as essential social values to be instilled by a liberal education, as well as curiosity and a questioning attitude as requisite academic or intellectual values (p. 2). He also indicates that "… a liberal education is likely to be unsettling" (p. 3). To me this suggests (in part) that it's not about finding the answers, but asking questions to which we might not know the answers. Hopefully that resonates with all of us as educators and researchers.

What do we (think that we) teach in the sciences?

In the sciences and engineering many of us pride ourselves on specializing in particular on critical thinking – problem solving, analytical, logical, and evidence-based reasoning. In a 2013 Twitter discussion with a reporter for The Atlantic, the Dean of Pomona College characterized liberal education as follows: "Discovery, empathy, adaptability is [the] goal of broad-based education, [and] prepares students for life, learning & jobs known & unknown." The point that they were trying to make was that "vocational" education (such as offered by another, non-liberal arts institution) could not possibly offer these perspectives to their students (Tierny, 2013). So do the sciences in general teach discovery, empathy, adaptability, and life preparation for both the known and unknown? I think many might argue that pieces of this package are missing. In some cases I would agree. I also believe that this is not only

dangerous, but that science and engineering programs are recognizing the value of other types of training. The next question is whether science programs **should** be moving toward a more liberal-education perspective. One possible answer is in this selection of media quotes:

> When unveiling a new edition of the iPad, Steve Jobs explained that "it's in Apple's DNA that technology alone is not enough — that *it's technology married with liberal arts, married with the humanities, that yields us the result that makes our hearts sing*" (Zakaria, 2015; emphasis added).

And from the same article,

> Mark Zuckerberg was a classic liberal arts student who also happened to be passionately interested in computers. He studied ancient Greek intensively in high school and majored in psychology while he attended college. And Facebook's innovations have a lot to do with psychology.… Of course, Zuckerberg understands computers deeply and uses great coders to put his ideas into practice, but as he has put it, Facebook is "as much psychology and sociology as it is technology."

So it seems that some of the high-profile successes in the field of technology have not only benefited from a liberal (arts) education, but embraced and required this type of education.

What liberal education offers to computer science

So what does liberal education offer to computer science? I mean, besides results that make our hearts sing, emphasis on communication skills, and novel perspectives on problems, to name just a few things. These are amazing things, and not to be overlooked! But I believe that liberal education has more subtle things to offer my field; subtle but important and worthy of discussion.

I have taught the course titled "Introduction to Software Engineering" (CPSC3720) several times in the past seven years. I have changed the course, not entirely to my satisfaction, each time I offer it. I began with a very strict and "scientific" approach, based on the Personal Software Process (Humphrey, 1996) and the Team Software Process (Humphrey, 1999). The general underlying idea behind both of these is that one should extensively measure all of one's activities and thus be able to track where problems lie and aim to improve in these areas. Despite this being the brainchild of Carnegie Melon University (CMU) and patented by the same, one of the student reviews on Amazon sums up my own impression of these processes:

"While the book does contain a lot of information about how to properly organize your time while writing software, I found its techniques to be too time consuming and involved to actually help my workflow" (Amazon.ca). These processes are certainly effective IF you can get the people involved to actually pay attention to them and carry out the activities involved. And in my class, the students did carry out the activities, but only because they were required, and only because they got marks for them. None of them intended to continue using them beyond the course. We also used a traditional waterfall approach (Sommerville, 2011) for our project development, which involved first developing extensive specifications and design documents, and then moving on to actually building the software products.

> *"The ability to listen to different voices and apply different perspectives are a part of a liberal education, and these are becoming essential skills for members of a software development team."*

After two offerings using this approach, I felt dissatisfied and disillusioned. For my next offering I branched out and learned about the Scrum framework for Agile software development (Rubin, 2012). I even became a scrum master (Scrum Alliance, 2015). The underlying idea behind Scrum is that change is constant and rather than struggling to manage and reduce change (as do most waterfall approaches to software development) we must embrace change. This requires, among many other skills, excellent communication and teamwork skills. Scrum, and Agile approaches in general, were introduced by a group of experienced software developers who were tired of seeing projects fail and dealing with

dissatisfied customers (Highsmith, 2001). They argued that traditional approaches were designed to fail, because people didn't know what they wanted until they got it (or didn't) – so it was essential to build small pieces of product and show them to the customer, and in essence *fail quickly* but learn from the failures. After all, a failure after a week of effort is much less expensive than a failure after a year of effort – and the latter type of failures are far too common in software engineering. Some of the principles within the Agile Manifesto are that communication is key; people are more important than processes; and self-reflection is key to improvement (Cunningham, 2001). While students in my last two offerings worked as hard as in the previous offerings, they were much more engaged with the process, and several students related to me that they planned to use this process in their future development projects.

Where is this going?

I relate these experiences to you in an attempt to give you an insight into my field: the emphasis in many areas of computer science has traditionally been on quantitative over qualitative, and process over people. Sadly, this has resulted in developments such as voice-over-internet-protocol (VOIP – where you get phone services from your internet provider) that in their infancy didn't work well for a large subset of the population despite the data showing their success. This was (in part) because VOIP was developed mainly by men, who hadn't thought to test on women's voices (Abbate, 2012), a triumph (in my opinion) of process over people. However, this new move in software engineering is in a sense turning these traditions upside down, as illustrated by the principles in the Agile Manifesto. And tying this back to liberal education, individuals with "soft skills" of communication, negotiation, and facilitation are highly in demand in the world of Agile development. The question is whether or not students are being trained in these skills as part of the traditional computer-science curriculum – probably not. However students with a liberal-education requirement can (and must) branch out. Unlike in my own undergraduate education, students in a liberal-education institution have the fortune to be required to explore other areas that may help them grow and nurture a broader set of skills, and they get to do so under the guidance of educators who are interested in and dedicated to helping them grow and learn. The ability to listen to different voices and apply different perspectives are a part of a liberal education, and these are becoming essential skills for members of a software-development team.

To look at this from another point of view, research shows that teams with "interpersonal" diversity may have more difficulties

communicating and negotiating activities within the team. To put it another way, teams consisting of individuals whose backgrounds and experiences are extremely diverse from each other may not have enough common ground to smooth the communication pathways. Familiarity with each other can mitigate this, but that takes time. However, teams with "intrapersonal" diversity have been shown to have an advantage in communications; that is if *each* team member has a diverse set of experiences, not necessarily overlapping those of their teammates, there is still something that the diversity brings to each individual that improves communication activities (Huckman & Staats, 2011). I would add to this that there might be more than just diversity of experience playing a role here; critical thinking in a liberal-education setting encourages recognizing biases and examining our assumptions, and I would assume that this type of introspection and self-awareness would also help in team communication and understanding.

Finally, a close reading of the principles behind Agile software development shows an emphasis on quality, on doing the right thing, on supporting the team, and on improving oneself. The fourth pillar of a liberal education is that of citizenship and civic engagement and working toward the public good. I believe this to be embodied in the principles of Agile software development in the sense that a good team member is a good citizen and that self-improvement will benefit society as a whole and is thus to be encouraged. Moreover, I believe that developers should be educated to question the purpose of their products and build software that will be of benefit to society, and that there is financial reward to be had in following this philosophy. By teaching the Scrum approach to software engineering and offering these perspectives I am contributing to the goals of building discovery, empathy, and adaptability in our students, and helping them to understand another aspect of computer science. As I tell my students, the person on their team who likes to chat and find out how their day has gone is contributing more than they realize to the team's effectiveness – and that person is going to be the ideal liaison with the customer! And that other person who notices that you are particularly frustrated and offers a helping hand or to talk through the problem is going to be one of the most valued members of the team. Technical expertise and experience is additionally valued, but software engineering is about so much more than that.

Wrapping it all up

The more I explore these ideas the more I find fascinating connections between aspects of computer science and the philosophies behind liberal education. Activities and thought processes that are essential to good software engineering require and benefit from the types of training and thought that we seek to encourage with a liberal education. Similarly, the team experiences and process that are becoming more and more common with the growth in Agile software-development methods help students to gain these new types of perspectives and outlooks that we hope will result from a liberal education. I hope that we see more explicit education in fields such as ethics, philosophy, culture, and psychology becoming commonplace in science and engineering curriculum, but for now I believe that my approach is at least a start

References

Abbate, J. (2012). *Recoding gender*. Cambridge, MA: MIT Press.

Amazon.ca. Reviews of The personal software process. Retrieved May 27, 2015 from http://www.amazon.ca/Introduction-Personal-Software-Process-sm/dp/0201548097/

Canadian Association of University Teachers (CAUT). (2013). Federal funding of basic research. *CAUT Education Review, 13*(1).

Cunningham, W. (2001). Manifesto for Agile software development. Retrieved May 27, 2015 from http://agilemanifesto.org.

Highsmith, J. (2001). History of the Agile manifesto. Retrieved May 27, 2015 from http://agilemanifesto.org/history.html.

Huckman, R. S., & Staats, B. R. (2011). *Fluid tasks and fluid teams: The impact of diversity in experience and team familiarity on team performance*. Manufacturing & Service Operations Management, *13*(3): 310-328.

Humphrey, W. S. (1996). *Introduction to the personal software process*. Reading, MA: Addison-Wesley.

Humphrey, W. S. (1999). *Introduction to the team software process*. Reading, MA: Addison-Wesley.

MacKay, B. (2013). Outcomes of liberal education. Unpublished manuscript.

Rubin, K. S. (2012). *Essential scrum: A practical guide to the most popular Agile process*. Ann Arbor, MI: Addison-Wesley Professional.

Scrum Alliance, 2015. Certified scrum master (CSM). Retrieved May 27, 2015 from https://www.scrumalliance.org/certifications/practitioners/certified-scrummaster-csm.

Sommerville, I. (2011). *Software engineering, 9th edition*. Boston, MA: Addison-Wesley.

Tierny, J. (2013). Who are you calling a vocational school? In defense of Maine Maritime. *The Atlantic*. Retrieved from http://www.theatlantic.com/education/archive/2013/11/who-are-you-calling-a-vocational-school-in-defense-of-maine-maritime/281456/.

University of Lethbridge Liberal Education Review Team (2014). Overview of liberal education. Unpublished manuscript.

Zakaria, F. (2015). Why America's obsession with STEM education is dangerous. *The Washington Post*. Retrieved from http://www.washingtonpost.com/opinions/why-stem-wont-make-us-successful/2015/03/26/5f4604f2-d2a5-11e4-ab77-9646eea6a4c7_story.html

Aboriginal
Ways
of
knowing
& learning

by Michelle M. Hogue

Michelle is an Assistant Professor and Coordinator First Nations' Transition Program at the University of Lethbridge

> *Such a language would be…one that grows in the middle.*
> *(Ted Aoki, 1993)*

Growing up, I loved the sciences and I loved writing and for a very long time my goal was always medicine. But life is full of twists and turns and circumstances, choices, and the Creator's plan, which can be very different from our own, often results in being put on a different path. So after my undergraduate degree and spending a couple of years in cancer research, those circumstances brought me to this place I had never heard of, Lethbridge, Alberta for what I thought was to be a two-year interim period of time. But again those life circumstances happened and that mathematical thing called exponents (2^n) turned two into some now twenty-plus years.

In moving to Lethbridge the only job I could garner at the time was teaching chemistry at the university. I wasn't thrilled by this, as teaching was far down on my list of "choice" jobs. I started as the only female instructor the chemistry department ever had and was that for many years before another was hired. I had the experience that many women in science at the time had – lack of voice and recognition

for good work and the criticism that my way of thinking and doing was not equitable to that of a man. I was told countless times that my questions around how we teach science and my way of doing that were a "woman's perspective and way of thinking." I bring this up not to rehash those issues or to point fingers but to set the stage for the concept that there are multiple ways of learning and coming to know, and they are not wrongly informed by such things as culture and gender. Yes, as a woman I perhaps see things differently, and as one of Aboriginal heritage, that too augments my way of thinking and learning. Dwayne Donald, a Cree Associate Professor at the University of Alberta, talks of culture and gender in education as being viewed as a deficit rather than a different way of seeing and thinking. I would agree with his observation and suggest that this perspective is a bias that stands in the way of education for Aboriginal learners, because Aboriginal ways of knowing and learning (AWKL) do not fit the current Eurocentric-based Western curriculum and methodological approach of education.

The University of Lethbridge is centrally located within the heart of the Blackfoot territory next to the largest reserve, the Blood Reserve, in western Canada. As such, it is a natural destination institution for local Aboriginal students who wish to pursue post-secondary education (PSE). In spite of its location, the Aboriginal enrolment remains very low and virtually non-existent in the sciences and mathematics, not unlike the national statistics (Friesen & Krauth, 2012; Statistics Canada, 2005, 2008, 2012). Science and mathematics (SM), as traditionally taught from the Western paradigm, have historically been and currently are roadblocks for Aboriginal learners. The challenges begin early in elementary school and most often accumulate as they progress to secondary school resulting in high attrition rates from the sciences and mathematics and subsequently high school (CCL, 2006a, 2006b, 2007, 2009). This prevents them from entering into SM-related degrees in PSE without, at the very least, substantial upgrading should they want to. Of those who do pursue PSE, nearly all choose non-science-related degrees. The consequent result of this impediment is that Aboriginal individuals are critically under-represented in SM-related professions at all levels. Without SM-related degrees, Aboriginal people do not have the opportunity to work within their own communities as professionals to build SM-related community capacity and self-efficacy in areas of medicine, education, the environment et cetera, or have equitable voice and representation in policies, governmental or other, that affect Aboriginal peoples and their communities.

The use of science, mathematics, and technology (SMT) is pervasive in all sectors of the economy and there are projected professional shortages in these areas with the retirement of the Baby

Boomer population and the fact the generation today has fewer and sometimes no children. Current pressure is already being felt in rural and remote areas. This projected deficit provides a critical opening for the fastest growing population, the Aboriginal population. However, in order to enable access to these current and future opportunities, success in SMT has to occur much earlier (K-12) and be sustained through all levels so that Aboriginal students are not streamed away from such courses, as they most often are, and can continue on SMT-related academic paths at the PS level.

There is adage that "Natives can't do science or mathematics" as Leroy Little Bear, U of L Native American Studies (NAS) professor emeritus, often jokingly says before he proceeds to explain the Native perspective on science. It might be more accurately stated that, "Natives often can't do science or mathematics in the way it is taught in the Western academic system," a way that is exclusionary to AWKL. Often I hear Aboriginal students say, "They (science and mathematics) make no sense to me" or "I can't understand the words in this textbook." As an oral culture, Aboriginal knowledge is not held in textbooks, but rather is held by cultural experts such as elders, in ceremony, and in traditional practices. It is passed on (taught) through story, narrative, or demonstration, and learning is by doing and teaching is through mentoring. The laboratory for Aboriginal peoples is the real and applied world. All things are related and inter-related holistically not compartmentalized into individual subjects such as chemistry, physics, biology, mathematics etc. as they are in the Western education system. In his interview Re-thinking Curriculum and Pedagogy[1], Ted Aoki talks of "curriculum-as-lived" in contrast to "curriculum-as-taught," and how the two often differ. For many Aboriginal students in the current Eurocentric-based Western education system this is the challenge; connecting the curriculum as taught with the curriculum as lived. It's an even greater challenge because their lived experience is a different cultural paradigm. This juxtaposition results in a paradigm clash on many levels and is key to the challenges many Aboriginal students experience in the education system, most particularly in SMT.

Western education has historically failed and continues to fail Aboriginal peoples. We hear so often the negative education statistics for Aboriginal people; the lack of attendance, high drop-out rates, lack of success, the statistical difference between on-reserve, and off-reserve graduation, to name just a few. While there are many social, economic, and political considerations at hand for Aboriginal peoples, I would venture to say that the Western education

---

1 "Rethinking Curriculum and Pedagogy: Interview with T. Aoki," *Kappa Delta Phi Record*, 35, no.4 (1999): 180-1.

system in its entrenched methodology is increasingly failing non-Aboriginal students as well. In fact, the 2015 summer edition of Education Canada[2], published by the Canadian Education Association is focused on exploring alternative methodologies to address the increasing high school drop-out rate of youth in the Western education system in general. As with Aboriginal learners, something is not working for them. In wearing my many hats as educator, researcher, coordinator, and mother of three daughters, I increasingly hear: What does this all mean in the big picture? How does that fit with me or my life? Who cares? Will I ever use this? and a myriad of other statements that attest to lack of context and relevancy for them. Interestingly, these very closely mirror the statements of my Aboriginal students. So what are we as educators and curriculum developers missing? How do we step out of the cliché "box" and approach teaching and learning in relevant ways that engage learners?

Students today are hands-on practical learners. They want to "do stuff," are resourceful and approach learning about nearly any topic through a myriad of resources made accessible through the Internet and Social Media. Gone are the days of textbooks, pen-and-paper and all the "archaic" (as my daughters tell me) methodologies of my era. Students aren't interested in learning a compartmentalized set of subjects that are not interrelated and connected for them. They see the issues and want to know how to address them; they want to see how it "all" fits together and how it applies to them. I recently very reluctantly retired my iPhone 3 in

favour of the 6 even though it was "still working," not because my kids teased me incessantly that I was a Luddite, but for the reality that it could not keep pace with the new changes and I was being left behind. So as educators and curriculum developers, if we don't engage differently with our young learners, Aboriginal or not, we too and education as it is will be left behind.

Culture (not unimportantly) aside, I argue that AWKL and the 21st Century learners of today very closely parallel each other. They are both hands-on practical learners who learn best by doing. They want to learn in environments that have context to their lives, that engage them, allow them freedom to explore, have their thoughts and voices heard and acknowledged, and they want it to be relevant, applicable and have meaning for them. Sounds a bit like being an academic, doesn't it? We could use the adages I often hear, "These kids of today … or In my day … or I had to … so should they," or as educators we could explore different methodologies and approaches to teaching, learning and developing curriculum in ways that engage them (and us as educators, too) and enable their success. What a liberal and liberating idea!

So where do AWKL and the 21st century learner meet? I believe liberal education[3] might be a weaving thread. As defined, liberal education is about the 'big picture.' AWKL are about coming to understand the whole in an interrelated and integrated cyclical way. Liberal education means exploring one's area of interest using a myriad of lenses to provide students with

a breadth of knowledge upon which to draw such that they are enabled to make connections in an interrelated fashion between areas of knowledge and learning. In doing so, they can integrate that knowledge into a coherent whole. Such an approach enables students to develop good critical-thinking and reasoning skills that allow for independence and self-efficacy in the future. Importantly, they develop tolerance and acceptance for difference of opinion, approaches to ways of coming to know, ways of being, and so on. It fosters good thinkers and citizens who can mobilize their thoughts and passions into action in their life and work. Interestingly, the principles of liberal education are the very foundational principles of the ways of learning, coming to know and being in the Aboriginal paradigm. Outcomes of both are "global citizens" who are responsible and contribute to the good of their collective at all levels.

Some months ago I had the opportunity to hear Charles Fadel, co-author of *21st Century Skills: Learning for Life in our Times* (2009), speak, and he talked of domains of learning. He suggested that curriculum and teaching should be developed around domains of 21st century interest and need such as health, the environment, the economy, technology to name a few, and learning about the domain should be approached through multiple lenses (science, mathematics, art, narrative, literature, music, history, language, economics, etc.) in an interrelated fashion so that there is a "big picture" understanding and application. This philosophy sounds familiar doesn't it, to the new movement towards inquiry-based learning[4] in education and mirrors AWKL and liberal

2 Canadian Education Association (2015). Towards Fewer Dropouts, *Education Canada*. Summer Edition.

3 University of Lethbridge. Faculty of Arts & Science: Liberal Education. http://www.uleth.ca/artsci/liberal-education

4 Alberta Education. https://education.alberta.ca/teachers/aisi/themes/inquiry.aspx

education? Possibly the gap isn't so far apart between Aboriginal and 21st Century Learners as statistics and all governmental documents (CCL, 2006a, 2006b, 2007, 2012) tell us if we consider how both learn and what is relevant to them. Perhaps we need a different, updated measuring tool, one that accurately reflects ways of learning and coming to know of all 21st century learners inclusive of culture and new ways of learning.

Mi'kmaq Elder Albert Marshall[5], coined the phrase "two-eyed seeing" as a guiding principle years ago and it has now been picked up across Canada by organizations and individuals in transcultural collaboration, many of whom are asking to hear more. Two-eyed seeing refers to the traditional Mi'kmaq understanding about the gift of multiple perspectives - a gift treasured by many Indigenous peoples. How do we best convey the message of two-eyed seeing to a new audience, this time for educators and 21st Century learners in the dominant system?

For our current time, Elder Albert explains that two-eyed seeing refers to the learning to see from one eye with the strengths of, or the best in Indigenous knowledge and ways of knowing, and from the other eye with the strengths of, or best in the Western (mainstream) ways of knowing, but…most importantly, learning to use both eyes together for the benefit of all. Two-eyed seeing implies responsibilities toward reciprocity, mutual accountability, and co-learning and is foundational to the First Nations' lifelong learning philosophy. Inclusivity and true relational understanding can only come

5 Eskasoni First Nation in Unama'ki (Cape Breton, N.S.).

from continual and cyclical commitment to Two-Eyed Seeing. The recent TRC Report (June 2015), calls Prime Minister Harper, all educators and Canadians to action to redefine success in terms of AWKL, encompassing the key attributes of Aboriginal learning including language and spirituality, and to develop tools and means of assessment that address the lifelong learning model of Aboriginal peoples. Such a redefinition is critical for the engagement, retention and success of all 21st century learners, Aboriginal and non-Aboriginal inclusive. In Elder Albert's words: "Seeds germinate when the environment is appropriate." Liberal education provides the tools to cultivate the seedlings.

References

Canadian Council on Learning (CCL). (2006a). What are the factors that facilitate and impede post-secondary access and participation of Aboriginal students? Ottawa, ON: Government of Canada. Retrieved from http://www.aved.gov.bc.ca/ccl_question_scans/documents/5-Aboriginal_Access_and_Participation.pdf.

Canadian Council on Learning (CCL). (2006b). What factors facilitate Aboriginal post-secondary success? Ottawa, ON: Government of Canada. Retrieved from http://www.aved.gov.bc.ca/ccl_question_scans/documents/6-Aboriginal_Post- Secondary_Success.pdf.

Canadian Council on Learning (CCL). (2007). The cultural divide in science education for Aboriginal learners. Ottawa, ON: Government of Canada. Retrieved from http://www.ccl-cca.ca/pdfs/LessonsInLearning/Feb-01-07-The-cultural-divide-in- science.pdf.

Canadian Council on Learning (CCL). (2009). The state of Aboriginal learning in Canada: A Holistic approach to measuring success. Ottawa, ON. Retrieved from http://www.ccl-cca.ca/pdfs/StateAboriginalLearning/SAL-FINALReport_EN.PDF.

Friesen, J., & Krauth, B. (2012). Key policy issues in Aboriginal education: An evidence- based approach. Toronto, ON: Council of Ministers of Education. Retrieved from www.cmec.ca.

Statistics Canada. (2005). National tables: Aboriginal data. Retrieved from http://www.statcan.ca.

Statistics Canada. (2008). Aboriginal peoples in Canada in 2006: Inuit, Métis and First Nations (2006 Census. Vol. 8). Ottawa. ON: Government of Canada.

Statistics Canada. (2012). High level indicators: Aboriginal peoples survey 2012. Retrieved from www.statcan.gc.ca.

Trilling, B., & Fadel, C. (2009). 21st century skills: learning for life in our times. New York: Jossey-Bass.

Arts in action

Liberal education gets creative and inclusive

an interview with Lisa Doolittle, Callista Chasse, Jeff Charlton and Corey Makoloski.

Since 2013, Professor Lisa Doolittle from the Faculty of Fine Arts Drama Department has been working on projects focused on including and working with people with developmental disabilities.

Recently she taught a topics course called "Dance and Theatre for All Abilities: Production Development." This topics course was a modification of a third-year course already being taught within the Faculty. The following interview explores the Drama 3850 all-abilities course as well as "Unlimited," the mixed-abilities

production that students in the course helped to develop. The group interview shares responses from the course instructor Lisa Doolittle, student and community liaison Jeff Charlton, as well as two teaching assistants in the course, Callista Chasse and Corey Makoloski.

Let's begin by exploring how this course was conceived. Could you tell me a little about building this course?

Lisa: After a fundamentals class in movement, drama majors need an additional movement course. I've been offering many different topics in a series course to support a broad range of movement learning. This year, what I wanted to offer was a movement course in the field of integrated or mixed-ability performance. As we got into the logistics of registering people with disabilities who had different high school graduation certificates than other students,

many barriers emerged. Prerequisites. We moved the course out of the degree-requirement stream to be able to remove the prerequisites, so they could register as open-studies students. Effectively what that did was not only allow people with disabilities to register, but also students with minimal movement experience from outside the Drama Department were able to join. So, a mixture of ability in every way. Eighteen students finished the class, and six of these were people with disabilities.

To provide some context could you explain what types of disabilities were represented in your course?

Lisa: One of the principles in class was that any person with disabilities is not reduced to their diagnosis. However, the particular disabilities affected the way in which people could communicate with them. We had a range

of students: some with Down syndrome, some autism spectrum, and one was severely visually impaired and had cerebral palsy. Of course many regularly admitted students have learning difficulties and other less visible disabilities.

How did this demographic work in relation to this course and the final production?

Lisa: Often classes advertised for mixed abilities attract only people with disabilities. The beauty of this course was that we had two-thirds without a disability and one-third with a disability. Pamela Boyd, a professional visiting artist from MoMo Mixed Ability Dance Theatre in Calgary, was so excited about working in this mix that is more representative of the world outside the university – many people with abilities mixed with a few people with disabilities. This mixture in the learning environment is more like the world students will enter into off campus.

Did you need extra support, or some prior knowledge or training about working with people with disabilities?

Jeff: Typically the support involved just talking with the guardians and checking in with the students to see what type of learning accommodations were necessary. This is more important than learning about the specifics of their disability.

Lisa: Students are individuals, and one person with Down syndrome is not the same as the next person with Down syndrome; just as one twenty-year-old is not the same as another twenty-year-old. I had some previous experience – the university course grew out of my teaching dance and drama to several of the students with disabilities in a community setting in 2013-14, in collaboration with community organizations (Lethbridge Association for Community Living [LACL], Southern Alberta Individualized Planning Association [SAIPA], and South Region Self Advocacy Network [SRSAN]). Corey and Callista, our two graduate students, assisted from their perspectives as Education and Social Work master's students respectively. Funds from the Drama Department helped to bring in Pamela Boyd, and her decade of experience training and working with professional performers with developmental disabilities was another support. Over time worry about adequate support evaporated as the students themselves figured out how to support each other.

Jeff, you had a rather unique role in the class. Could you explain your role and how you acted as a support within the class?

Jeff: I was a community liaison officer for the class, a satellite support with LACL. They knew increased communication would be essential and raised money to support the position. So I worked closely with the students with

disabilities. For example, one student with a severe visual impairment faced transportation barriers – I picked her up at the outer doors every day, and we walked to class together. I also liaised between the families of the students with disabilities and the instructors. I talked with Lisa, Callista, and Corey about what challenges needed to be addressed and what the general feeling of the class was about studio work and projects.

Clearly accommodations are an important aspect of this course. Did accommodations change any drama-related aspects of the course?

Lisa: I was looking for learning in both creating and performing skills. I included all the fundamental drama/movement studio activities: warm-ups, body-awareness work, movement skills, individual and group improvisations and performance creation. Required assignments included group and solo performance presentations to the class. Creating solo work is sometimes imagined as an internal self-focused exploration. We did it inclusively in trios, where two of the students became the critical outside eyes, the coaches of the other. This is analogous to the useful process of peer review in other courses. The workshop production, which was the final whole group assignment, became an amalgamation of assignments they had done in class.

So how does working on a performance-creation course with students who have mixed abilities compare to working with a group that has no disability issues?

Jeff: The learning was completely new for most students in the course. I know I have never created art with people with disabilities before. Those who realized that this was the goal of the class were really successful. A few mainstream students struggled with the inclusive approach in the class, and expressed frustration with an apparent lack of challenge. Whereas those who were really hands-on and working with the students with disabilities, trying to create alongside those students rather than leading them, got more out of the class.

Could you comment on what "real inclusion" means and what this concept means to the students in the course?

Callista: I agree with Jeff that mixed-ability art-creation skills were developed, but also consciousness-raising as to what it means to work in an integrating way and to create community. The students expressed a lot of "Aha" moments about what it means to be truly inclusive, to learn that people learn in different ways, and that there are others ways to explore and make art. They discovered many reciprocal benefits. Quite early in the course I was struck

by the openness of all our students to create in a truly free and original way. When it became clear that this course was not about pity, charity, or tokenism, students of all abilities were able to contribute equitably. Differences were welcomed and served to create this wonderful, diverse community. People with disabilities often have others exert power over them, dictating what they do every day. This experience was different. Creating scenes and dances together was a really empowering experience for the students, because everyone got a chance to participate in their own way.

Lisa: This individual empowerment and group empowerment are key to fostering any kind of creativity, and are key to learning, not just in a mixed-abilities class. Our approach fostered the kind of learning that happens inside a trusting ensemble, that helps to give students confidence in their abilities.

After students acquire skills and confidence, what can they do with those skills? Who can support them – and who can they support? These are mindsets that will help them after they leave the classroom and enter our competitive entrepreneurial society, where connections and support are so important to survival.

What unique strategies to problem solving in any of the assignments, projects, or activities emerged in this mixed-abilities environment?

Lisa: Here's one example. At first, we were very preoccupied with the student who was severely visually impaired and had some movement difficulties. She could not participate in an exercise that develops key skills like spatial awareness and how to move as an ensemble, that I call "cover the space." Each person attempts to move through all the space in the room, and in different ways. Slow, fast, high, low, while keeping awareness of the whole group. An easy solution would be to have someone lead her. But, far too often people who are visually impaired are led by the hand through their whole life. More "being led around" was not going to improve her drama skills, nor support development of individual agency. We used a duet variation on the exercise. One student was to take off into the space, but with eyes closed. They needed the support of their seeing partner who would keep in contact from behind – their hands on hips, back, or shoulders, whatever worked best. This variation built up movement confidence, but it also built up an incredible amount of trust inside the class. It was a fabulous thing to watch because the room would get completely energized. "I can do anything because I trust the people I work with," is the basic tenet of creativity.

Jeff: We got to a point where our student who was visually impaired could move freely throughout the room in any activity, knowing that if she was in danger of bumping into something or someone, a random classmate would guide her

to safety. And it was always someone different.

Callista: That is an important distinction, Jeff, because initially it was just you and me, feeling it was our task to be the support people. We were engaged so heavily in being the supports that we weren't as vested in our own experience of the class. Gradually we realized we were taking opportunities away from the rest of the class to step in and learn what we were doing as supports and to develop their own ways of supporting. So as we designated supports and pulled back, students in the class just stepped up and helped in their own way. And it wasn't just a disability/non-disability issue, there were people helping each other out throughout the whole process.

You obviously went through a lot of trial and error to see what worked and what did not. Does a course of this subject matter allow you more flexibility in exploring what fails and succeeds?

Lisa: To some extent, yes. In the arts, one often is looking for the unique; the arts value new ways of solving problems, and there are multiple right or wrong answers depending on the context. However, in my opinion, much of the inclusive practice that we developed is valuable to teaching and learning beyond the creative-arts classroom.

What were some of the benefits to being a learner in a course that had community and inclusion built right into the course structure?

Callista: The trust we developed in class, mentioned in the individual journals, class debriefs, all the focus groups, and any discussions we had – that sense of trust was important. In post-secondary learning, especially in huge lecture classes, you often become just a number, you don't take chances. Trust and community allow all students to fail, to take risks, as stages toward success.

It seems that the course was a success. What words of wisdom do you have for those in post-secondary who wish to explore a mixed-abilities course?

Lisa: It's all about the learner and support for the learner whether it is a mixed-abilities class or not. To be successful, a mixed-ability class may have to be smaller and have community building embedded in the class structure – for example, the peer-to-peer "satellite" support that developed in our class. Support may begin with a designated support worker but it works so well when the whole class becomes invested in providing support. I think with this approach, people with disabilities could succeed in many more types of subjects. When we help each other, when students help other students learn, we all learn better.

And what are some challenges that still need to be addressed?

Callista: Lethbridge Association for Community Living Executive Director Dave Lawson came and spoke to our class about the change from institutionalization, to including people with developmental disabilities in community life, and about natural supports. The current way we imagine supporting disabilities is with paid workers and structures. Once people with

disabilities come out of the K-12 system, if they don't continue in post-secondary or in entry-level employment, they may not forge the kinds of employment networks and friendships that university students make, that are going to last throughout their life and are going to be natural supports. Bringing developmentally disabled students into the University is hopefully going to help create sustained friendships and natural supports in the lives of people with disabilities, which will increase their well-being and their ability to contribute to society.

Lisa: While we are not implying that all people with developmental disabilities can get degrees in drama or degrees in math to the same exact qualifications as people without disabilities, we know that being in this post-secondary environment is good for the people with disabilities because they learn life skills, just as students without disabilities do. Being exposed to people with disabilities and inclusive practice in the academy is also good for the people without disabilities. Why? Because everyone needs support. That is how the world is, it is made up of people with disabilities and without disabilities, who come from privileged and less-privileged backgrounds, who get sick or remain healthy… The real challenge is removing disability stereotypes and improving access. Many post-secondary institutions are figuring out ways to include people with developmental disabilities where they can be successful.

Could you tell me a bit about the production and how it was related to the class?

Lisa: Productions are expensive, resource-hungry things, and mistakes or artistically unwise decisions are costly, so in both university and professional contexts new work is often tested in a studio setting. I knew that to produce this department's first mixed-abilities production we would have to take the workshop approach.

As you worked on the production, were there surprises or challenges that you weren't really prepared for?

Lisa: It all felt a bit scary and dangerous. Out of the protected environment of the classroom, suddenly this group was going to be exposed to designers, staff making their sets and costumes, the general public, publicity interviews, and five nights of shows in a 450-seat theatre. Our classroom production didn't get as far down the road as we had hoped, because the class was really developing a method and an ensemble, and that was necessary. We didn't have a script. We didn't even have an outline. But we had a great production staff team in our department, great community supports, and this great group of students. So we had the tools we would need most.

The real X-factor was that we wanted a large cast. Not everyone from the class was able to or wanted to audition for the production. In the end we cast four of the six people with disabilities from the class, and four more people with developmental disabilities auditioned and joined. Some students without disabilities from the class auditioned and were cast, but we also took in other students without disabilities. Eight out of the twenty-two people in the cast did not have the experience from the class. This new mixture of experience and inexperience created both opportunities and challenges but what supported us through it all was the community-building approach.

Could you comment on some of the positive aspects or experiences that came from this production?

Lisa: We created much of the show out of improvisations. This meant that everyone could bring forward whatever unique abilities they had. First each cast member created their own character, and by improvising together in rehearsals, we gradually found groupings and relationships that drove the story forward. After seeing many improvisations, we started planning which scene went where. Because the early phase was so open ended, and because of the confidence that came out of creating their own material, some unique and wonderful discoveries happened, some genuine moments of connection for the actors. The genuineness of the show, I think, could be felt by the entire audience.

Corey: As a bonus, when it came to the very nerve-racking stage of moving from rehearsal studio to the stage, the fact that everyone was so invested in their own character helped inexperienced students deal with the new context – with stage fright or being afraid of the dark. We couldn't so easily deal with someone forgetting their lines or their stage movements, which could have occurred in a less-collaborative and less-improvised production process. It was easy to support those with fears and hesitations, because we had been making these types of adjustments all along. So this method that came out of the class, this genuineness served us very well.

The focus on inclusion and community in this course is a great exemplar for social change. What aspects of social change could you see

emerge from the experiences in this course and the production?

Corey: I don't think this [the course and production] was as much of a social-change campaign as it was an awareness campaign. I think awareness is the first step for creating change.

Callista: The comments that we got in the Talk Backs after each show reflected the social-change potential. People often commented that they didn't know who had disabilities and who didn't. Maybe people expected the show to really point at the issue of inclusion and that really wasn't what we did. There was no agenda, just this beautiful demonstration on stage of how things can be. It was a great example of people coming together and genuinely connecting and creating together. Bottom line is people. Not people with and without disabilities. Just people.

Lisa: To find out more about the potential for social change, we distributed a four-page questionnaire to audience members. Over five nights, 1,025 people attended, and over 512 completed questionnaires were returned – a very high return rate. Early analysis indicates strong correlations between the enjoyment of watching our version of inclusion, and the motivation to get more involved with the disability community.

We heard about changes in the lives of people with disabilities. One of the parents wrote an emotional letter thanking the cast for their part in the changes in her son's life. She described how he used to be the guy who was isolated, trailing behind people, but when she picked him up after rehearsals she saw him right in the middle of energized groups of students, laughing and talking with them. He developed a new relationship, not someone from the cast. He has started a small business. She expressed that being part of the show opened a whole new world for him and for the family.

Callista: I don't want to essentialize their experience in anyway, but the impression that I got was that what was most important to all of the students with disabilities was the relationships that they formed with the students who were university students, and the experience of being here, physically here in this space....

Lisa: It's important, too, that some drama and drama-education cast members are reconsidering career options to include working in the disabilities arts or education fields.

Are you looking at any ways to sustain these relationships that have been built within this inclusive community?

Lisa: We have had some social outings after the end of the show just to keep the community going, but it is distressing that for the people with disabilities this was a "one-shot deal" – another in a long line of laudable pilot projects that don't reach their full potential due to lack of funds or structural support. As far as continuing inclusive arts work, Corey's graduate project is a mixed-ability production. We have filmed our production process and will release a documentary in 2015-16. An Inclusive Education Working Group has been established on campus. So we are trying to find sustainable ways to get more students a chance to access the learning opportunities of mixed-ability classrooms.

What would you say connects this course and production to the liberal-education philosophy of the University of Lethbridge?

Lisa: Arts learning intersected with liberal-education philosophy in many ways in this project. Paralleling the interdisciplinarity of liberal-education courses, this course included students from many different majors and faculties. The way the course and production called upon deep personal connection and commitment resonates with liberal education's goal to provide learning that matters because it is attached to one's sense of identity, and because it connects oneself to the bigger picture. Engaging in mixed-ability arts necessarily involves teaching and learning good citizenship, another lib-ed goal; in every class we confronted the kinds of exclusion and inclusion that deeply affect civic life, and what's more, practiced ways of thinking and acting that could contribute to positive change. Artistic performance pedagogies work at connecting head to heart, emphasizing learning through embodied experiences – bringing moving, speaking, feeling, and thinking together. Liberal education "challenges, enlarges, and liberates the mind through critical examination of ideas" (http://www.uleth.ca/artsci/liberal-education). An even more focused combination of these two approaches could produce some pretty amazing learning.

Information Literacy

as an
Essential Component
of Liberal Education

by Nicole Eva
and Sandra Cowan

Nicole Eva is the liaison librarian for Management and Economics, as well as Liberal Education at the UofL and Sandra Cowan is the liaison librarian for English, Modern Languages, Religious Studies, and the Faculty of Fine Arts at the UofL.

The Association of College & Research Libraries, a division of the American Library Association, defines information literacy as "a set of abilities needed to recognize when information is needed, and to find, retrieve, evaluate, and effectively and ethically use information" (ACRL, 2000). It is an essential academic literacy and a basis for lifelong learning.

Information literacy is more than teaching the mechanics of how to "find" information – such as how to search a database for scholarly articles, or how to find a book in the library catalogue. It's an entire information-seeking process. These skills are not just important for success at university; they are also important in life, both personal and professional. As information continues to be created at an exponential rate, being able to evaluate that proliferation of information is an important life skill. Everyone needs information, whether at work, for personal health reasons, or for a multitude of other reasons. As such, being able to discern the accurate and authoritative from the chaff is critical.

This may seem like an obvious skill to most of us; however, it's not always so cut and dried, especially for undergraduates who often seem to take information they find at face value and lack the skills to critically evaluate the information they come across. Likewise, some of us are very familiar with the ways we find

and evaluate information in our own discipline, but may be totally unaware of the conventions of other subject areas. For example, a historian conducting solo qualitative research based on ideas involves library and archives research using books, often physically located in the library, and a lot of writing. On the other hand, scientific research is often done in a lab, and is usually a collaborative process with quantitative results; much of the "library" research is done online, or with preprints or conference proceedings.

You know best how knowledge is created, communicated, and understood in your discipline, so from that standpoint it makes sense that you also instruct your students on how and where to find this information, how to understand it, how to use it, and how to evaluate it. If each of us talks to our students about information from our own disciplinary perspective, they get a more complete picture of
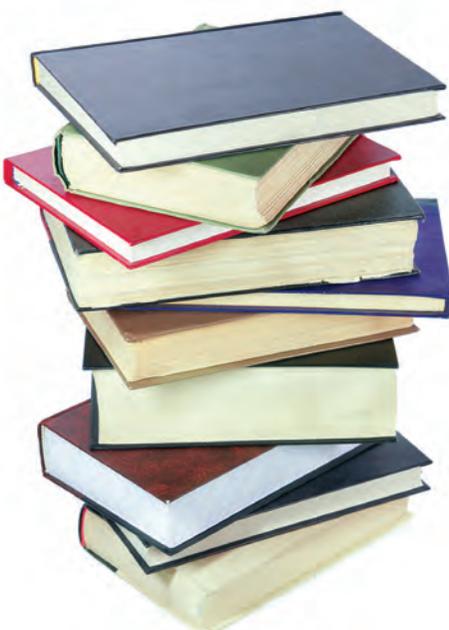
how to find, use, and evaluate information in all areas of their life. This is the beauty of a liberal education – cross-disciplinary perspectives. Information literacy feeds into each pillar of our stated objectives for liberal education at the University of Lethbridge. Under "breadth across disciplines," information literacy is a stated outcome. Within "ability to connect and integrate knowledge," the importance of considering multiple viewpoints/across disciplines are outcomes – both that information literacy helps achieve. Under "critical thinking and problem solving," the need for evidence-based reasoning, formulating good questions, learning to learn, and knowledge synthesis are stressed – all parts of information literacy. And within "education for citizenship," the importance of evidence-based decisions and consideration of multiple viewpoints are mentioned – again, natural fits for information literacy. Information literacy is an overarching literacy that is seldom taught in any single class, but that is an integral part of each student's education. And like the other liberal-education competencies we want to stress in order to integrate these concepts into each student's liberal education, it has to be fully integrated into each class. Like any other literacy, it requires practice and repetition in various contexts.

The Association of College & Research Libraries recently released a new *Framework for Information Literacy for Higher Education* that mirrors very closely many of the concepts we are trying to emphasize in our vision of liberal education at the U of L. Clearly, we all have very similar goals in educating our students.

While reinforcing most of the key concepts of information literacy – the ability to locate, evaluate, understand, and ethically use information – the new *Framework* re-frames them as threshold concepts and outlines a much larger, more complex, and comprehensive idea of information literacy in response to our much

larger and more complex digital and information landscapes. Information literacy is now viewed as one part of a multitude of literacies that we all need to achieve competence in to be successful students, researchers, and citizens in the 21st century. Ultimately, metaliteracy is the goal that we are moving toward – an integrated web of interconnected literacies that include digital, media, visual, academic, and new literacies.

Inherent in both metaliteracy and the new *Framework* is the acknowledgement that students are both consumers and creators of information, often simultaneously, and often within a collaborative and online information landscape. The emphasis has moved away from the utilitarian skills of searching and finding, to a much greater emphasis on the evaluation of information, understanding how authority is constructed and contextual, and understanding that information seeking and creating (i.e., research) is an iterative, collaborative conversation. In other words, it's really about teaching critical thinking.

Librarians are happy to supplement information literacy instruction in your class by teaching a particular class on search skills, evaluation, and so on, but clearly we cannot be in every class, and we cannot cover the full scope of information literacy in one 50-minute session – or even several of them. It would take a whole course in itself (which we have in Library Science 2000). But even then those skills need to be reinforced within the context of different classes.

Students see you, their professors, as the authority and will listen if *you* say it's important. The concept of information literacy will become ingrained if it's reinforced in various classes, in various disciplines. Like writing, reading, critical thinking, and many of the liberal-education educational goals, information literacy is a core competency that will be most successfully integrated into a student's knowledge base if it is reiterated in many classes, across the curriculum, and throughout a student's academic career.

References

Association of College & Research Libraries. (2000). *Information literacy competency standards for higher education*. Chicago, IL: American Library Association.

Association of College & Research Libraries. (February 2, 2015). *Framework for information literacy for higher education*. Retrieved from http://www.ala.org/acrl/standards/ilframework
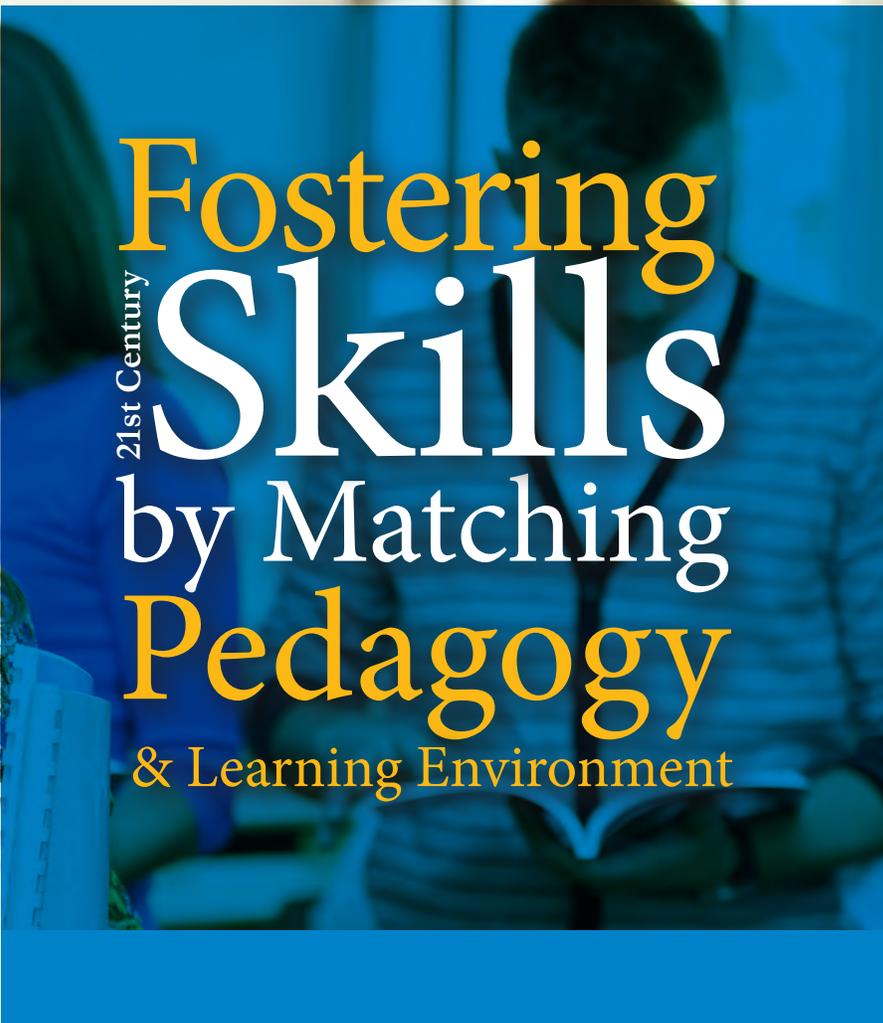
Fostering 21st Century Skills by Matching Pedagogy & Learning Environment

by Luz Janeth Ospina M. and Victoria Holec

Luz Ospina has been a Spanish language instructor since 2008 in the Department of Modern Languages and Victoria is an analytical assistant with the Learning Enviroment Evaluation Project within the Teaching Centre.

In the 21st-century workplace, employers increasingly look for skills like collaboration, cooperation, creativity, and problem-solving ability in their future employees. In the spirit of rekindling the principles of our liberal-education foundation, many instructors at the University of Lethbridge are introducing these skills to their students. In my (LJO) Spanish courses, online content, digital assignments, and mobile technologies are key. These ways of learning and interacting are critical to our digitally native students of the 21st century. They are also crucial to my courses because the most important outcome for students is pragmatic competence in Spanish. Pragmatic competence stems from the field of Pragmatics, which "in modern linguistics … has come to be applied to the study of language from the point of view of the users, especially of the choices they make, the constraints they encounter in using language in social interaction, and the effects their use of language has on the other participants in an act of communication" (Crystal, 2008, p. 379). For foreign-language learning, the use of pragmatic competence generally occurs in an *applied pragmatics context*, which "focuses on problems of interaction that arise in contexts where successful communication is critical, such as medical interviews, judicial settings, counseling and foreign-language teaching" (ibid., p. 379).

> *We must uncompromisingly forge a connection between the word and the world, and also unrelentingly help our learners see and benefit from that connection.*
> (Kumaravadivelu, 2012, p. 4)

Pragmatic Competence – Global Competence !

Developing students' pragmatic competence is a valuable way to make students aware of how to communicate appropriately in a target language. A review of pragmatics studies concludes that explicit teaching of pragmatics in the classroom is very effective in developing students' pragmatic competence and fosters intercultural competence (Kramsch, 1993; Rose & Kasper, 2002). While pragmatic competence can be viewed through the narrow lens of language teaching, it is conceivable that pragmatic competence can be achieved in any field or specialization. Students at the end of

their academic careers will be competent in the *language* of their field, and able to speak, write, and work well within it. It goes without saying that the development of pragmatic competence necessitates an active learning pedagogy to allow students to engage, communicate, and interact with each other – in this case in Spanish! Learners of the 21st century are aware of the importance of becoming globally competent in a world where collectivism has a greater role than individualism. It is in this collectivism where they make the connection between the *word* and the *world*.

Why the Learning Environment Matters for Pragmatic Competence

In language teaching, we could assert that active learning is a goal, because students must become independent while using their linguistic repertoire in context. In order to achieve optimal conditions for active learning, I (LJO) discovered that being an engaging teacher is not always sufficient. Rather, the learning environment has to allow for active learning. I have been advocating for a suitable classroom in which my active teaching style can flourish since I started teaching Spanish at the U of L in 2008. Interestingly, most of the classrooms at post-secondary institutions, including the U of L, do not reflect 21st century learning and teaching strategies, and are instead predominantly suited to only one style of pedagogy, which is premised on the process of traditional knowledge transfer. As Felix and Brown (2011) point out, "Traditionally, the classroom was seen as the locus where knowledge was transmitted from the instructor to the students. The challenge is to completely revise this model, designing classrooms that support, encourage, and enable active learning engagements." However, Canadian post-secondary institutions are fundamentally behind in this trend. When the U of L built a brand-new active-learning environment, I did not have to think twice about moving all my courses into that room for the following four semesters (Fall 2014, Spring 2015, Fall 2015, and Spring 2016).

Here are important elements that are crucial to the active learning pedagogy I employ:

Classroom. My pedagogy is facilitated in a designated classroom. This classroom has fixed tables conducive for teamwork, an instructor station in the centre of the room, and no front of the room.

Collaboration. In Spanish, my courses are designed to utilize collaboration in pairs or in larger groups to maximize participation and contribution to the learning process.

Active Learning. Students are engaged in active learning during class time. My role is to facilitate this. I lecture minimally, and mainly to explain a concept in grammar or pragmatics.

Technology as an Organizer. Students have access to laptops (if needed) to access in-class activities and record their work. Each group table has access to one large screen and ample whiteboard space to work on assignments together.

Learning Environment and Engagement Study in Spanish

My (LJO) courses benefited tremendously from being held in a learning environment that suits my teaching style. I had an inkling that this was the case, but it was not until the Learning Environment Evaluation project team (LEE) came into my classes and did a formal study. Between Fall 2014 and Spring 2015, we had a unique opportunity to compare four classes based on the rooms they were held in, with two being held in traditional classrooms (one flat, one mildly tiered; 1000-level courses) and two in the new classroom (one 1000-level, one 2000-level course). We employed a survey gauging student engagement and perceptions about the learning environment. The first set of questions regarding engagement was taken from the classroom version of the National Survey on Student Engagement (CLASSE, NSSE; Leger et al., 2013; Ouimet & Smallwood, 2005; Reid, 2012). The second set of questions regarding the learning environment was taken from the LEE classroom evaluation survey.

Looking at the engagement variables, six out of seven did not produce statistically significant differences (Figure 1). However, upon re-assessing the type of questions, we concluded that frequency of participation ratings are not a complete measure of engagement. In the design of the courses investigated, students have to participate frequently to obtain good grades. Therefore, we determined all classes studied were engaging by design, regardless of the room (see Figure 1).

Interestingly, students in the new classroom worked significantly *more frequently* with their classmates outside of class than in the traditional rooms. This finding made sense in light of the group dynamics that were naturally created in the new classroom, as students were sitting together, facing their classmates, and working with them continuously. We believe that the strong community created at the tables factored into the likelihood of working together outside of class.

Looking at student perceptions of the learning environment, students in the new classroom found the room significantly more effective than the traditional rooms (Figure 2). Further, students thought that the room facilitated different learning activities better compared to traditional rooms. It also showed that the novel learning environment was physically more comfortable than the traditional environments. Lastly, and importantly, students own perceptions indicated that the new classroom facilitated their engagement in the learning process more than in the traditional classrooms. These findings were robust even when the analysis was conducted based on course, in order to rule out that the advanced 2000-level course carried all the weight of producing significant differences for room variables (see Figure 2). In addition to student engagement and perceptions of the learning environment, we also found that students in the new classroom attended class significantly more frequently, and that final grades were higher.

Conclusions

In line with known successes from the literature, results from the Spanish classes showed that students taught in the new classroom have higher

Figure 1

Student Engagement
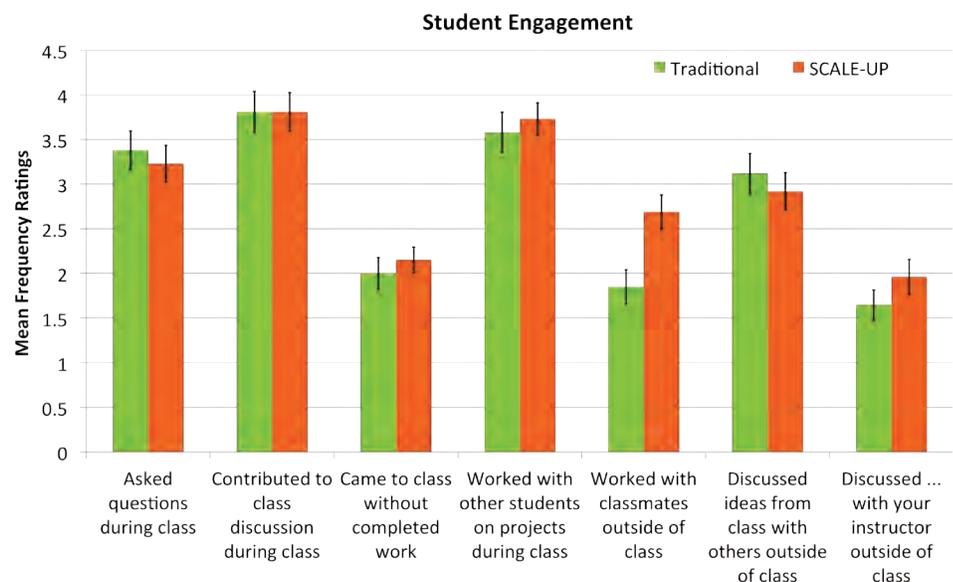
Figure 2

Student Perceptions of the Learning Environment by Room
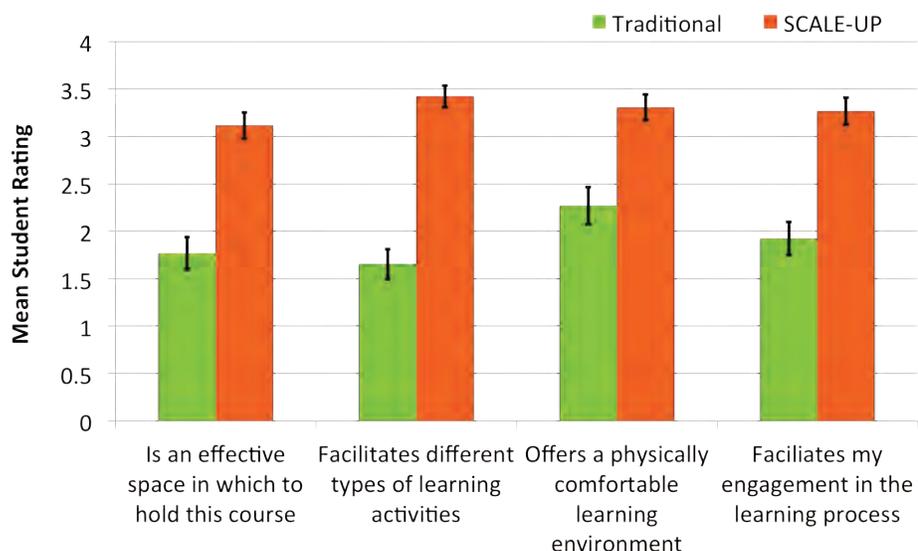
attendance and better grades. Importantly, our study also revealed an interesting factor of engagement that is often lacking in a traditional classroom: cohesion among students. Students worked with their classmates *outside* of class time significantly more frequently than in traditional classrooms. Working together is a crucial step toward community building within a class. As borders of time and space morph into fluid entities that only depend on your Internet connection, collaboration can take place anytime and anywhere. Creating a community mentality in the classroom that allows for both synchronous and asynchronous, face-to-face and virtual collaboration is a great preparation for the 21st century collaboration requirements. As the world is changing at its fastest speed known to us, a new challenge presents for faculty: How does one keep up? We assume students are digital natives, and many of us may be digital immigrants. Yet, it turns out that sometimes we just need to move to a new perspective, or a new classroom. Existing ideas can be propelled into something new and exciting simply by packaging them into new technologies. Collaboration and pragmatic competence have never lost their relevance. There are just different ways of implementing them now.

References

For A Light on Teaching magazine article: "Fostering 21st-Century Skills by Matching Pedagogy and Learning Environment"by Luz Janeth Ospina M. (Modern Languages) & Victoria Holec (Teaching Centre).

Beichner, R. J. (2008). The SCALE-UP project: A student-centered, active learning environment for undergraduate programs. An invited white paper for the National Academy of Sciences. Retrieved from http://physics.ucf.edu/~bindell/PHY%202049%20 SCALE-UP%20Fall%202011/Beichner_ CommissionedPaper.pdf

Beichner, R. J. & Saul, J. M. (2003). Introduction to the SCALE-UP (Student-Centered Activities for Large Enrolment Undergraduate Programs) project. Paper presented at *Proceedings of the International School of Physics* Enrico Fermi, Varenna, Italy.

Beichner, R. J., Saul, J. M., Allain, R. J., Deardorff, D. L., & Abbott, D. S. (2000). Introduction to SCALE-UP: Student-centered activities for large enrolment university physics. Presented at the *Annual Meeting of the American Society for Engineering Education*, Seattle, WA, Session 2380.

Benson, L. C., Orr, M. K., Biggers, S. B. Moss, W. F., Ohland, M. W. & Schiff, S. D. (2010). Student-centered active, cooperative learning in engineering. *International Journal of Engineering Education*, 26(5), 1097--1110.

Crystal, D. (2008). *A dictionary of linguistics and phonetics*. Malden, MA: Blackwell Publishing.

Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences,* 111(23), 8410-8415. doi: 10.1073/pnas.1319030111

Kramsch, C. (1993). *Context and culture in language teaching*. Oxford: Oxford University Press.

Kumaravadivelu, B. (2012). The word and the world. *marcoELE Revista de Didáctica, 14,* 1885-2211.

Lasry, N., Charles, E., Whittaker, C., Dedic, H., & Rosenfield, S. (2013). Changing classroom designs: Easy; Changing instructors' pedagogies: Not so easy... *AIP Conference Proceedings*, 1513, 238-241.

Leger, A., Godlewska, A., Adjei, J., Schaefli, L., Whetstone, S., Finlay, J., Roy, R., & Massey, J. (2013). *Large first-year course re-design to promote student engagement and student learning*. Toronto: Higher Education Quality Council of Ontario.

Michael, J. (2006). Where's the evidence that active learning works? *Advances in Physiology* Education, 30, 159-167. doi: 0.1152/ advan.00053.2006.

Ouimet, J. A. & Smallwood, R. A. (2005). Assessment measures: CLASSE-the-class-level survey of student engagement. *Assessment Update,* 17(6), 13-15.

Rose, K. R. & Kasper, G. (2002). *Pragmatic development in a second language*. Oxford: Blackwell Publishing.

Whiteside, A., Brooks, D. C., Walker, J. D. (2010). Making the case for space: Three years of empirical research on learning environments. *EDUCAUSE Quarterly*. Retrieved from http://www.educause.edu/ ero/article/making-case-space-three-years-empirical-research-learning-environments
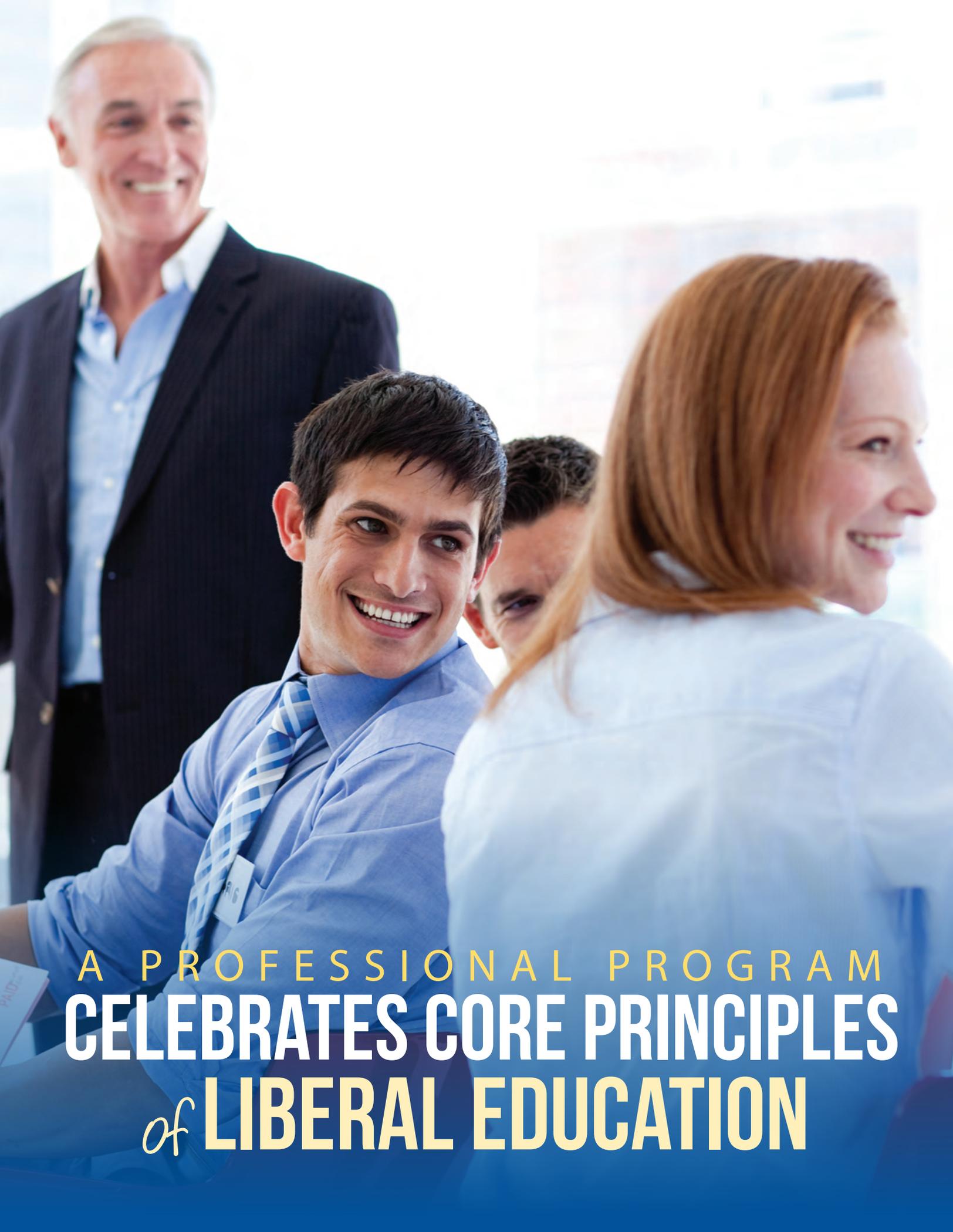
A PROFESSIONAL PROGRAM
CELEBRATES CORE PRINCIPLES
of LIBERAL EDUCATION

by John C. Poulsen and Beth Cormier

John is an associate professor in the Faculty of Education and Beth is a Curriculum Librarian in the Curriculum Lab which is part of the Faculty of Education.

Abstract

A symposium was inaugurated at the University of Lethbridge's Faculty of Education to enhance an existing research component in the undergraduate pre-service teachers' final practicum. Pre-service teachers in their final 15-week practicum, where they function much like a .5 teacher, envision, design, and implement a Professional Inquiry Project (PIP) that for the first time found a venue beyond their school.

As an undergraduate research project, the PIP represents a significant investment in critical thought and innovative problem solving. As a professional tool, it represents a necessary strategy for meeting challenges, improving student learning, and contributing new knowledge to the profession. Given these factors, it is not surprising that the need for greater recognition and dissemination of the PS III Professional Inquiry Projects became apparent.

PIP Symposium: A Professional Faculty Celebrates Core Principles of Liberal Education

In August 2014, an idea surfaced at a pre-semester planning meeting. We were discussing Professional Semester III (PS III), which is the final practicum experience in the Faculty of Education. It is referred to as an internship to denote the added responsibility that the Faculty of Education student takes on. This internship is a significant component of the program, because our pre-service teachers have already completed the required number of hours for Alberta certification and essentially function as half-time teachers for several months. During this time, interns are required to complete a Professional Inquiry Project (PIP). The PIP is significant because it represents an opportunity for interns to identify and address challenges or issues in a specific teaching context. Through asking focused questions, taking action, and then reflecting on the results, interns use a small-scale research model to inform their practice. They engage in the critical thinking and meaningful problem solving that have been nurtured by a liberal education, demonstrating their potential as teachers who will constantly question their own effectiveness in order to enhance student learning.

Though the PIP has existed for several years, a vehicle for sharing these projects has not. Our interns are doing fantastic work: piloting new approaches to curriculum, collaborating on school-wide initiatives, and addressing student engagement are only three examples of the approximately two hundred projects undertaken each year. Interns contribute not only to their assigned schools, but to the knowledge base of the profession. Surely this work needs to be shared and celebrated!

The need for greater recognition of the PIP was clearly expressed at the planning meeting, and a proposed way to address this need was through a symposium. We observed that symposia, with their focus on recognition and dissemination of student research, are increasingly common in undergraduate settings. Snow (2010) captures much of the dynamic, collaborative nature of a research symposium:

[A research symposium is] an effective way to provide a forum for students to learn how to present their work, for undergraduates not yet involved in research to gain access to mentors and generate ideas for projects, for the university to showcase the powerful impact that research participation has on undergraduate education, and for students, faculty, and staff to discuss current research with community members and parents in a high-energy setting (p. 18).

We also realized that a symposium would be an excellent way to recognize and enhance the role of undergraduate research in teacher education. There is much support for positioning student-led research as a culminating element of a bachelor's degree, providing an opportunity for significant academic and personal growth. Wisker (2009) states, "Identifying questions and research methods or strategies, and organizing a research project through to completion is an exciting challenge involving commitment, individual development, interactions, and hard work" (p. xix). Collis and Hussey (2003) support undergraduate research as a vehicle "… to provide for active learning where the student identifies and defines the problem to be explored and work to be completed thus learning from the experience, rather than passive learning methods" (p. 24). Smith, Todd, and Waldman (2009) elaborate on the benefit of independent, focused work, stating, "Learners will have a more prolonged engagement with the chosen subject than is the case with 'standard' coursework assignments such as essays or reports with the work consequently expected to be more in-depth" (p. 2).

The PIP provides this research component in our Bachelor of Education program, with its intern-determined focus and semester-long period of study in one area. There are academic benefits inherent in the project, but there is also a strong focus on professional growth. Schulz and Mandzuk (2005) discuss their findings in a study of classroom-based projects completed by pre-service teachers: "Teacher candidates also identified the transformative nature of inquiry as another benefit. They felt that through inquiry they could not only become better teachers, they could also make contributions to the larger educational community" (p. 320).

Encouraging pre-service teachers to view themselves as researchers reflects a broader trend, described by Cheruvu (2014), where teacher research is seen as a vehicle to improve practice and increase student learning. It can also play an important role in a developing teacher's growth. Edwards (2014) states, "The preparation of teachers as enactors of developmentally appropriate pedagogy for young children is complex and operates within a broader contested structural and cultural context" (p. 15). Pre-service teachers deal with a steep learning curve as they enter the profession. One way to deal effectively with that curve is to engage in purposeful research that addresses the specifics of each learning situation.

For pre-service teachers, research may take many forms including developing better ways to help students learn as well as enacting change then evaluating the efficacy of that change. Cochran-Smith and Lytle (2009) state, "… teacher research has a distinctive potential for rethinking, resisting, and re-forming the ways we think about, and take action regarding the arrangements and purposes of schools and schooling" (p. 39).

It is this constant research-based interaction with students that makes teachers better. Saunders and Somekh (2009) state that, "Even the most detailed curriculum specification has no power of itself to bring about change, because learning in classrooms is a process resulting from the enacted interactions of teachers and students, rather than the aspirations set out in a curriculum document" (p. 190). Cochran-Smith and Lytle (2009) continue, "When teachers make the current arrangements of schooling problematic and use daily practice as critical sites of inquiry, they not only mirror the kind of curriculum that many agree is necessary for learning in this complex global environment,

but they position themselves as lifelong learners, people who interrogate and enact inventive pedagogies that address the real learning needs of particular students and that evolve over time" (p. 47).

Reviewing the literature about undergraduate and teacher research is a helpful reminder of the great potential inherent in the PIP. As an undergraduate research project, the PIP embodies significant critical thought and innovative problem solving on behalf of the intern. As a professional tool, it helps develop a necessary strategy for meeting challenges, improving student learning, and contributing new knowledge to the profession. It is well positioned as a culminating project in our Bachelor of Education program, reinforcing the liberal-education ideals of critical thinking, creativity, and active engagement in meaningful problems.

In the three months that followed the pre-semester meeting, the first Professional Inquiry Project Symposium took shape, and was held on Dec. 12, 2014. As with any project, the process of developing the symposium involved an interesting balance between vision and practicality. It also fostered a new collaborative relationship between two colleagues with different expertise.

The resulting event was considered successful by both attendees and presenters, and led to the conclusion that future PIP symposia are both desirable and necessary. We documented the process of creating the symposium by recording journal entries, and include those here. Woven into the journal entries is a respect for the collaborative process, as well as the sense of anticipation and conviction that comes with undertaking a worthwhile project.
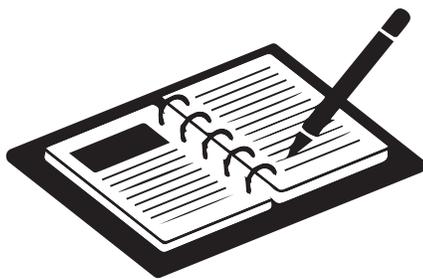
Journal Entries

John – August 29, 2014

A very exciting time this – at the beginnings of an idea. Just the beginning. Everything is new and possible.

The idea is simple: to give to the PS III interns the opportunity to actually present their Professional Inquiry Project to an interested audience. Interns have been creating very exciting work for years and we need to showcase that work.

I worked on a committee that hoped to bring in Sir Ken Robinson as part of a symposium for Southern Alberta educators. That fell through, but what I liked was the side idea that PS IIIs would participate, finally have a forum for sharing their work. At the PS III meeting earlier this week the symposium idea was raised again but there were mixed feelings. Primarily people thought that it was a good idea but that it might be too late to make it a reality for this semester. I heard clearly that making it a requirement for PS III interns would be a bad idea, but I have a strong sense that there are some interns for whom this would be seen as a great opportunity.

On Tuesday, August 26 I chatted to Beth, the curriculum librarian. We agreed to move this idea forward and made some tentative decisions such as the date (Dec. 12, 2014 from 1:30 to 4:00 p.m.) in the Curriculum Laboratory. Tentative title is Celebrating Inquiry: University of Lethbridge Faculty of Education Professional Inquiry Project Symposium.

Beth – Friday September 5, 2014

Barely two weeks after the seed of an idea was planted, we are rolling. I'm curious to see how this can possibly all get done, but I know it will. We have a short timeline and have to announce the event shortly, even though the application deadline is not until November.

With Darcy's [Tamayose] great communications support, we will have a logo soon and be ready to launch a site. We wondered how to build a form for collecting information from participants so we turned to Ken [Heidebrecht], our Faculty's technology integration facilitator, for advice. He popped up his Google Forms examples, which will be perfect. I have never used them but I think I can create what we need and figure out how to get it on our Drupal page. Now to remember my Google ID.

John – Friday, September 12, 2014

We are tearing it up! Earlier Beth and I had a meeting where we created promotional materials: a request for proposals and an informative email for the PS III University Consultants (UCs).

The website looks good (http://www.uleth.ca/education/Symposium). It is professional in appearance and easy to navigate. We tested the submission form and it works like a charm.

The word *symposium* is Greek in origin and means "drinking together." One famous symposium was Plato's, where the famous philosopher examined the nature and purpose of love. We will wrestle with the idea of having wine at a later date.

Beth – Friday September 19, 2014

I became involved with this project because my role in the Faculty centres on connecting our pre-service teachers with resources and materials to support their teaching. I see the PIP projects as another valuable resource, and have visions of a vast electronic repository where this material can be accessed.

John's suggestion for sharing the material online is to develop an online journal: different than what I was picturing, but we explored all options today. We outlined some challenges regarding sharing PIP material online. For example, videos involve huge FOIP issues. Many videos would include K-12 students, and we would need parent permission to post any student images on our site. The format of material posted would also vary greatly: annotated bibliographies, lesson plans, reflections, and websites are all possible products. For audiovisual projects, file size might be an issue.

It became clear that a true online showcase of complete PIPs is likely not feasible at this time. John pointed out that we already plan to collect significant information from participants when they submit a proposal for the symposium: description of project and influence in the school. His suggestion that *this* could be the content for an online journal took me a little by surprise. He is right of course: it has to be manageable, but I wonder if this abbreviated information can really capture the exciting work being done, and will it motivate others to apply new ideas to their own teaching?

John – October 3, 2014

This project is exciting, and we are now discussing how our own work could be disseminated. Generally, we want to publish and present. Some venues for presentation include the 2015 Western Canadian Association for Student Teaching (WestCAST) conference at the University of Saskatchewan. The other consideration is the Hawaii International Conference on Education (HICE) in January. Hmmm – Hawaii in January or Saskatoon in February? Sadly, WestCAST seems the better fit.

Beth – October 10, 2014

This project started at a busy time, but the regular meetings with John really help – we are more accountable to each other and there is less chance that deadlines will slip by. Our big goal right now is getting the word out; our carefully drafted emails have just been sent, so it is time to get on Twitter and generate some buzz. I'm not going to tell John, but I also still need to book the rooms in the Curriculum Lab.

John – October 17, 2014

We discussed some publications that might be

interested in this topic and eventually felt that *A Light on Teaching,* published by the University's Teaching Centre, might be the most applicable. We spoke about possible structure for both the presentation and publication, and decided that we would begin with a literature review. I will start some lit review work this week. We have to chat about: first authorship, structure of presentation, structure of the publication, and schedule for the writing.

Beth – October 24, 2014

We have three proposals so far. At some point we need to think about what the online journal is going to look like.

John – October 31, 2014

We now have a creation schedule for both the WestCAST presentation and the *Light on Teaching* publication. The focus right now is the lit review. We have given ourselves the following deadlines, and the assigned person is expected to send *something* (anything!) to the other by midnight.

> October 31 – John (Yikes)
> November 14 – Beth
> November 28 – John
> December 19 – Beth
> Meet November 6 and December 3 at 2 p.m. to reset

Beth – November 4, 2014

Today we drafted a program for the event. John wants it to be classy: in colour and on quality paper. We asked Margaret [Bientema, Admin. Support] to help with the design.

John – November 7, 2014

It was agreed that Beth would be the first author at WestCAST and I would be the first author on the *Light on Teaching* article. We agreed from the start that the minimum number of participants we needed was three. We now have three proposals so the symposium will go ahead.

Beth – November 14, 2014

While our initial plan was to simply focus on creating a vehicle for sharing the PIPs, we are uncovering a broader need for strengthening the position of the Inquiry Project in our program. Because the intern must define the project, incoming interns often approach the project with uncertainty. Being able to experience their peers' projects through attending the symposium or viewing the journal may help interns better prepare for completing their own PIP. The symposium also provides a way for all faculty and staff to participate in this culminating project, as opposed to only a few UCs.

John – November 28, 2014

Today was the deadline for proposals. We have fourteen presentations! How exciting. Fourteen is much more than three. We will have three concurrent sessions in rooms 1170G, 1170A, and 1170B. Each room will have four or five presenters. We have chosen specific interns to present first and then be the chair of the session. Each presentation is allocated 20 minutes. We hope for approximately 10 minutes of presentation and then 10 minutes for questions. We even have an intern beaming in via the Internet.

We discussed the problem of concurrent sessions as we organized who was to present in each room. Concurrent sessions mean that each audience member will only see one-third of the presentations yet concurrent seems to be the most reasonable option. Our current program will run approximately 100 minutes, and anything longer is just not feasible.

Beth – November 28, 2014

Well, the event is one week away. It's a good thing I like dealing with small details, because there are many. We had mentioned refreshments a while ago, but didn't commit to anything. We now have a budget ($100) and I ordered some coffee, cookies, and water. Printing will cost $100, so our total cost is $200. We also made sure the symposium is listed on the Notice Board.

John – December 19, 2014

Marvelous. What an amazing array of presentations. The symposium was a clear success. The interns raved about how it was reaffirming. The audience raved about how exciting it was to hear about innovation. And Beth and I raved about how it worked. It just worked.

A major part of the conversation afterward centred on the theme of closure. The interns who presented felt that coming back to campus and presenting was a form of closure for them. I realized that one of the problems with PS III is the lack of closure. At the end of Professional Semesters I and II, we bring the students back to the University for a "culmination day." But at the end of PS III interns do not have closure with us. This probably has much to do with our placements being spread across the world; still, this is an idea that has got me thinking.

Beth – December 19, 2014

What a great experience. Almost 50 people attended, and we had three rooms buzzing with collegiality and insight. We assigned one intern to act as chair in each room, and they were tasked with introducing each presenter and monitoring time. They did their jobs beautifully. What surprised me was the level of questioning and

discussion in the room. Interns and prospective PS III students had a genuine interest in learning from their peers, and there was clear evidence of creative problem solving within a specific context. Steve had a grade 11 Social Studies class where motivation was lacking, so he asked, "To what extent can engagement and student learning be increased by the use of games and simulations in a Social Studies 20 classroom?" Ray looked at how he could incorporate journaling into science class to increase understanding of Big Ideas and Essential Questions. Alyssa's project was similar to Ray's, questioning whether blogging could foster meaningful engagement with current science literature, and Michael's project was drawn from an incredibly rich opportunity to work with Nepalese Second Language students who had lived in refugee camps prior to coming to Canada, allowing him to explore the philosophy and practices around restorative education.

We also had a number of arts-related projects, including Megan's masked theatre that explored using dramatic arts to increase confidence and learning in a literacy intervention program, and Keith's insights into how a full-scale Shakespeare production could be implemented in middle school. Many disciplines were represented, as was a clear commitment to exploring different approaches to teaching and learning.

John – January 27, 2015

Celebrations are generally a good thing. It is possible that we (as a Faculty) do not celebrate specific achievements enough. For example, the notable work that the PS III interns do in their Professional Inquiry Projects has heretofore not had a celebratory venue. Now they do. Now they can be celebrated.

The side celebration of closure and culmination was and continues to be a revelation to me. Anyone could have asked the simple question "Do PS IIIs need closure?" but who knew? Now that I do know, what obligation do I have to that knowledge? Hmmm.

What else do I know now? A small group of people such as Beth and myself can make change, which can be invigorating both for the planners and the participants. Finally, perhaps the most important, celebrating that which is worthy is itself worthy.

Conclusion

Any new project requires work and resources. Following the first symposium, the question arose: "Should this event continue?" One concern is attracting participants. It is notable that all participants were strongly recruited by their faculty supervisors, contrary to the idealistic expectation that interns would embrace the opportunity to share their projects.

Despite any initial reservations, however, each presenter expressed clear satisfaction with the opportunity to connect with peers, share their work, and experience a sense of closure. Also encouraging was the enthusiastic reception from the fifteen incoming interns who attended. Several expressed a willingness to present at future symposia. The benefits experienced by these two groups of students suggest that the issue of attracting participants should be seen as a challenge for planning for future symposia, but not a deterrent. We are considering a process of nominating/inviting potential participants, recognizing that interns are more likely to participate when personally asked.

The symposium brings welcome attention to the PIP's role in our program. The PIP gives pre-service teachers a research model that can continue to benefit their practice and help move the profession forward. It helps define and shape our Education baccalaureates as professionals who embrace intellectual curiosity, engaged problem solving, and innovation. The symposium is intended as a celebratory event, and there is indeed much cause for celebration: not simply because of the accomplishments seen within a four-month professional internship, but the culmination of an undergraduate education rooted in diverse experiences and critical thought.

For more information on the PIP Symposium visit http://www.uleth.ca/education/symposium. For a showcase of recent projects visit http://www.uleth.ca/education/celebrating_inquiry.

References

Cheruvu, R. (2014). Focus on teacher as researcher: Teacher educators as teacher researchers: Practicing what we teach. *Childhood Education, 90*(3), 225-228.

Cochran-Smith, M., & Lytle, S. (2009). Teacher research as stance. In S. Noffke & B. Somekh (Eds.), *The Sage handbook of educational action research*. Thousand Oaks, CA: Sage.

Collis, J., & Hussey, R. (2003). *Business research: A practical guide for undergraduate and postgraduate students*. New York: Palgrave Macmillan.

Edwards, G. (2014). Pre-service teachers' growth as practitioners of developmentally appropriate practice: A Vygotskian analysis of constraints and affordances in the English context. *European Journal of Teacher Education, 37*(1), 4-17.

Esau, O. (2013). Preparing pre-service teachers as emancipatory and participatory action researchers in a teacher education programme. *South African Journal of Education, 33*(4), 1-10.

Gray, C. (2013). Bridging the teacher/researcher divide: Master's-level work in initial teacher education. *European Journal of Teacher Education, 36*(1), 24-38.

Sagor, R. (2011). *The action research guidebook: A four-stage process for educators and school teams*. Thousand Oaks, CA: Corwin.

Saunders, L., & Somekh, B. (2009). Action research and educational change: Teachers as innovators. In S. Noffke & B. Somekh (Eds.), *The Sage handbook of educational action research*. Thousand Oaks, CA: Sage.

Schulz, R., & Mandzuk, D. (2005). Learning to teach, learning to inquire: A 3-year study of teacher candidates' experiences. *Teaching & Teacher Education, 21*(3), 315-331.

Smith, K., Todd, M., & Waldman, J. (2009). *Doing your undergraduate social science dissertation*. New York: Routledge.

Snow, A. A., de Cosmo, J., & Shokair, S. M. (2010). Low-cost strategies for promoting undergraduate research at research universities. *Peer Review, 12*(2), 16-19.

Wisker, G. (2009). *The Undergraduate Research Handbook*. New York: Palgrave Macmillan.

GREAT JOB
Jan!

2015
DISTINGUISHED TEACHING
AWARD RECIPIENT

WELCOME
Lisa!

NEW
BOARD OF GOVERNORS
TEACHING CHAIR

Historical Thinking *for* Student Teachers

by Amy von Heyking

Amy is an associate professor in the Faculty of Education.

Students often enter a teacher-education program with instrumentalist attitudes and expectations about what professional education should entail. They expect practical preparation: specific tools and strategies that will help them become teachers, actively engaging children in learning that meets established curricular outcomes. Indeed, the Bachelor of Education (BEd) program at the University of Lethbridge is designed to ensure that student teachers graduate with the knowledge, skills, and attributes required to be effective teachers in K-12 schools (Alberta Education, 1997). But to be a skilled, thoughtful professional educator requires much more than practical preparation; it requires a strong grounding in and further development of the critical-thinking skills and attributes associated with a liberal education. Roth (2014) stresses that these skills "help us to think for ourselves, take responsibility for our beliefs and actions, seize opportunities and solve problems" (para. 13), essential skills for classroom teachers in the 21st century.

Our BEd program builds on the liberal-education experience students bring with them upon entering the Faculty. Student teachers must demonstrate a commitment to critical inquiry and critical thinking if they are going to be successful in their courses and field experiences. The program also integrates liberal education into professional preparation, largely through courses that are called "foundational" disciplines in education: history, philosophy, and sociology. As Carbone (1980) says, "The foundations serve the important function of applying the content, insights, and methods of liberal studies to educational issues" (p. 15). These courses foster student teachers' disciplinary thinking, attending to the epistemological foundations, ontological commitments, and modes of inquiry unique to these disciplines. They nurture critical thinking, challenging schooling conventions and conformity, and encouraging student teachers to both problem pose and problem solve. Courses in educational foundations help students bring a broadened perspective to bear on educational issues and cultivate their ability to make reasoned judgments in complex school settings. They prepare them for the kind of thinking and learning teachers must do as they grow personally and professionally throughout their careers.

In spring 2014, I was awarded a Teaching Development Fund grant in order to develop teaching materials for my course, History of Canadian Education. The materials consisted of kits of primary-source documents used in the historical inquiries that allowed me to foster student teachers' historical thinking. Historical thinking is disciplinary thinking; it is central to "the creative process that historians go through to interpret the evidence of the past and generate the stories of history" (Seixas & Morton, 2013, p. 2). Why does historical thinking matter for teachers? It matters because recent curriculum reforms in K-12 Social Studies programs require a shift away from the transmission of historical information toward the cultivation of historical reasoning (Clark, 2011). New programs in schools require that history teaching facilitate students' ability to think historically, to create, interpret, and assess the quality of historical accounts. Students can only develop historical thinking if they "do" history, and this requires a pedagogical shift for many teachers who usually impart historical information rather than engage their students in historical inquiries. Teachers, therefore, must have historical expertise and experiences with "hands-on" history themselves if they are going to implement inquiry-based teaching in their own classrooms.

But I also focused on the development of historical thinking because of its potential contribution to teachers' professional identity and decision making. History offers a powerful mode of inquiry that develops skills of interpretation of evidence, an understanding of concepts such as change and agency, and encourages the exploration of unfamiliar perspectives. Only by "doing" history can student teachers develop the skills of assessing evidence in order to answer questions about the change and continuity in schooling, about the causes and consequences of those changes, and consider the ethical dimension of issues related to schooling in the past. It requires student teachers to explore the legacy of our educational past and its implications for schooling and their teaching practice. It provides crucial insights that contribute to their sense of professional responsibility.

Course Design for Historical Thinking

In my design of the course, I was influenced by Calder (2006), who argues that history instructors should not "cover" content, but "uncover" the discipline:

> We should be designing classroom environments that expose the very things hidden away by traditional survey instruction: the linchpin ideas of historical inquiry that are not obvious or easily comprehended; the inquiries, arguments, assumptions and points of view that make knowledge what it is for practitioners of our discipline; the cognitive contours of history as an epistemological domain (p. 1363).

So I began by attending to elements of what Calder (2006) calls "signature pedagogies" that "unfold from big questions that students are likely to find meaningful, questions that are useful for uncovering how expert practitioners in a discipline think and act" (p. 1368). I was mindful of the need to focus the course around critical-inquiry questions that would be significant and relevant for future teachers. I designed the course around an overarching critical-inquiry question: To what extent has contemporary schooling been shaped by its history? When I introduced the students to related questions and inquiries I developed for the course, I made my own considerations of historical significance explicit. I told the students that my thinking was influenced by Clark's (2013) assertion that "In order for history of education courses to regain a place with pre-service teacher education programs, they must be viewed as relevant to the issues that teachers, school administrators, and curriculum and policy developers face in their professional lives" (p. 36). So I crafted historical-inquiry questions that would help

students explore issues most relevant for them as beginning teachers: questions related to the history of classroom practices, to the work lives of teachers, and to the experiences of children in schools. Given that schools in Alberta are currently grappling with a major learner-centred curriculum revision initiative, I included an exploration of previous attempts to introduce progressive education in the province. Our investigation into the experience of children in schools was intended to provide the students with insights into the nature of the lived as well as official curriculum. Students in our teacher-education program take several courses related to the diversity of school populations. Hence, I included an inquiry related to the schooling of students of racial, linguistic, and ethnic minorities in the past. In designing the course, I chose themes that would give a "classroom" view of the history of schooling, a perspective most significant for these student teachers. And most importantly, I included an opportunity for the student teachers to conduct an oral-history interview with a retired teacher and to complete a culminating project that would allow them to undertake their own historical inquiries.

Calder (2006) also stresses that in designing history courses, "the intellectual project envisioned by their big questions is advanced through a standard pattern of instructional routines. Routines are essential for learning. Routines provide students with a necessary scaffolding of instructional and social support as they struggle to learn the 'unnatural act' of historical thinking" (Calder, 2006, p. 1369). The course was a seminar where classes primarily consisted of my routinely providing information to set the context for our inquiry, and allowing students to read and discuss historical accounts related to our inquiry questions. I provided a structure for their readings drawn from Nosich (2012) that required students to analyze the reasoning of the accounts. This analysis was framed around eight elements of reasoning: purpose, key question at issue, information, key concepts, conclusions, assumptions, point of view, implications, and consequences. This provided an effective structure to build their critical-reading skills. Another routine was regular engagement with and interpretation of relevant primary sources. The TDF grant had allowed me to hire a research assistant to collect primary sources related to our inquiry questions: Department of Education reports, programs of study, school textbooks, excerpts from memoirs, archival photographs, articles from the *Alberta Teachers' Association Magazine*, and magazine and newspaper articles from the time periods under examination. My assistant created the hard copy and digital "kits" of primary source material that allowed me to facilitate this inquiry-based approach. During the seminars, I worked with the students to analyze and interrogate these sources, identifying the author's purpose, argument, and assumptions, and considering how the sources

supported or challenged the interpretations in the accounts we had read.

Calder's third element of signature pedagogies in a history course is that it "requires regular, public student performances" (p. 1369). So students were required to lead seminar discussions on the course readings, analyzing and assessing the quality of the author's reasoning. They selected other primary-source material for their peers to interpret and designed activities to engage them in their learning. The inquiry focus of the course required students to collaborate in their investigations, so that the class often looked more like a lab than a lecture hall. In their study, Anderson, Day, Michie, and Rollason (2006) identified "supportive group ethos and effective group work" as crucial for the success of students undertaking primary-source analysis in post-secondary history classes (p. 258). This was certainly true for the student teachers in this class. They worked together on primary-source analysis. They shared the narratives that emerged from their oral-history interviews. They collaborated to create documents that answered the course-inquiry questions. They certainly demonstrated that powerful historical understandings emerge when we think for ourselves, but not by ourselves.

Fostering Student Teachers' Historical Thinking

I explicitly structured course discussions, assignments, and written reflections around questions and issues that would require the student teachers to address the elements or concepts of historical thinking originally defined by Peter Seixas: significance, evidence, continuity and change, cause and consequence, historical perspectives, and the ethical dimension. Seixas, writing with Tom Morton (2013), explains that, "the ideas that we refer to as 'the big six' historical thinking *concepts* reveal *problems* inherent to constructing history," – they essentially shape the historical method and "give us a vocabulary to use while talking with students about how histories are put together and what counts as a valid historical argument" (p. 3).

Foundational to the historical method is an understanding of how historians come to know about the past, the concept Seixas and Morton (2013) call *evidence*. Sophisticated historical thinkers understand that "history is interpretation based on inferences made from primary sources," that those sources must be interrogated and understood within the context of their creation, and that our inferences must be corroborated (Seixas & Morton, 2013, p. 40). The course gave student teachers ample opportunity to interrogate a range of text and visual archival sources. Completing an oral-history interview with a retired educator forced them to grapple with another, unique kind of source. These

interviews required the student teachers to confront questions of intersubjectivity and the nature of memory as they used the information they gathered as evidence in their historical investigations. In their final projects, the student teachers analyzed a wide and diverse range of primary sources in order to write accounts of continuity and change in teachers' working lives, in specific curriculum areas like mathematics, in the education of "special education" students, and in teachers' use of classroom technologies. All of these inquiries were student directed and required that they engage with primary-source evidence in order to answer their questions. The course focus on "uncovering" history – understanding and practicing the methods of the historian – seemed to have an impact on student teachers' understanding of history as an interpretive discipline. In a written reflection completed at the end of the course, Rachel wrote that the oral-history interview and the final project taught her "how to be a storyteller, critical thinker, and an interpreter of history."[1]

The course inquiry into *change and continuity* in curriculum and pedagogy helped student teachers understand that "change is a process, with varying paces and patterns" (Seixas & Morton, 2013, p. 74). In their final reflections, student teachers commented on the complexity of initiating change in schooling; they noted that some reforms, like child-centred pedagogy, have been attempted several times, and that changes have been episodic and incremental. I challenged them to create visual images that illustrated their understanding of changes in schooling over time. In response, the student teachers drew Venn diagrams, time lines and even images of trees that showed foundational ideas that have "rooted" schooling, and the reforms that have grown and borne fruit or have been shed like dried leaves. Communicating their understanding through these images demonstrated their sophisticated historical thinking about the nature of educational change.

The student teachers also noted the continuity of issues in schooling over time. They were surprised that the female teachers they interviewed chose teaching as a career in the 1970s for the same reasons as the women of earlier generations did: there were limited career options available to them; they were encouraged by teachers in the small communities they grew up in; they saw it as a relatively quick way to earn a decent living. They were surprised at the enduring nature of gendered expectations in terms of teachers' working responsibilities. Their oral-history interviews raised other themes that demonstrated the continuities in the working lives of teachers in rural schools over many decades: feelings of isolation and a lack

of professional support, for example. Rachel's narrator told her about the social pressures on her as a female teacher in a small town, and how she socialized with friends in neighbouring communities to avoid the prying eyes of her students and their parents. These reminiscences were quite shocking for the student teachers who had imagined that these attitudes they had read about were long gone by the 1970s.

Related to the concepts of change and continuity, Seixas and Morton (2013) state that "progress and decline are broad evaluations of change over time. Depending on the impacts of change, progress for one people may be decline for another" (Seixas & Morton, 2013, p. 74). Themes of progress and decline were prominent in the historical accounts we read and particularly in the teachers' interviews. They became a major focus of the student teachers' discussions about their interviews and of their writing. They identified trends that were characterized as progress: increased acknowledgement of students' diversity; more relevant curriculum; and, more authentic assessment of children's learning. They were not surprised by the trends their interviewees had seen as making teaching increasingly challenging: family breakdown, a lack of respect for education in society generally, and the increased bureaucratization of school systems. For some of the students, themes of progress and decline became the focus of their own historical inquiries. For example, Laura, in her final project, explored the benefits and drawbacks of the impact of technology on teaching. The student teachers realized that what some saw as marks of progress in the profession were seen as steps backward by others. Some of the retired teachers talked about improvements in teacher education, but several argued that programs had become too long, too theoretical, and too expensive. Two told their interviewers that they would not become teachers if they were starting their careers today because "it's much more complex now, it's too vague and too open," and "teachers are expected to be so creative." These were qualities that are generally characterized as positive trends that make schooling more engaging for students. Exploring change and continuity from others' perspectives challenged the student teachers' assumptions about developments in the history of schooling.

Seixas and Morton (2013) describe the historical thinking concepts of *cause and consequence* as helping students understand why trends emerge and change occurs, and consider the impacts of those events. The course readings we completed emphasized the social, political, economic, and cultural conditions for changes in school policies, curriculum, and instructional practices. We also explored the specific individuals who initiated significant changes in Alberta's school system in the 1930s and 1940s in order to better understand the role of historical actors within those contexts, and in order to illustrate Seixas and Morton's insight that, "historical actors

cannot always predict the effect of conditions, opposing actions, and unforeseen reactions" (p. 102). The course provoked two important insights for the students regarding the causes and consequences of changes in schooling: first, that teachers were not consulted about major change initiatives; and second, that many significant policy and curriculum changes had little impact on teachers' work in their classrooms. These insights provoked a class discussion about the nature of educational reforms. The students recognized that reforms developed without teacher input were unlikely to be implemented in meaningful or enduring ways. This, in turn, sparked an investigation into the nature and extent of teacher involvement in recent efforts to redesign the provincial school curriculum, and a discussion about whether the fact that teachers are involved in both provincial and local redesign initiatives would result in more successful implementation of changes. That the student teachers were able and eager to apply their historical insights to current issues is certainly a demonstration of the value of historical thinking in professional preparation.

Perhaps the most important area of growth in the student teachers' historical thinking was in what Seixas and Morton (2013) call historical perspectives and the ethical dimension of history. They say that "taking perspective means attempting to see through the eyes of people who lived in times and circumstances sometimes far removed from our present-day lives" (Seixas & Morton, 2013, p. 138). The students struggled to bring their understandings of historical perspective, their sense of how the people of the past thought differently, to bear on issues and events in the history of Canadian schooling that they found troubling or simply unethical: the treatment of First Nations people in residential schools; the marginalization of children of ethnic and racial minorities, and children with learning challenges; the use of corporal punishment. Seixas and Morton explain that when students consider the ethical dimension of history, they are considering how history can help us live in the present. They stress that "students tend to judge the ethics of past actions according to the standards and mores of the present day. By introducing students to historical thinking, we help them learn to judge the past fairly" (Seixas & Morton, 2013, p. 170). The course gave student teachers the opportunity to grapple with several issues in the history of schooling they found troubling, challenging them to develop more sophisticated historical perspectives on those issues and consider the implications of those perspectives on their own practice.

For example, Alan led the class discussion on our reading about children's experiences in formalist schooling. He quickly pointed out the author's critical stance as reflected in passages like this: "[the] system was based on teachers talking and pupils listening, a system that discouraged independent thought, a system

---

1 All student teachers are referred to by pseudonyms. Their comments are quoted from class assignments and written reflections completed at the end of the course.

that provided little opportunity to be creative, a system that blamed rather than praised, a system that made no direct or purposed effort to build a sense of self-worth" (Sutherland, 1997, p. 192). Alan interviewed a retired teacher who began her career in 1945. During the interview, they discussed the benefits and drawbacks of teacher- and child-centred pedagogies, and the challenges of implementing progressive instructional strategies in the late 1940s. Her insights helped Alan better understand the efficacy and endurance of teacher-centred instruction. In his final course project, Alan strove to present this teacher's traditional, teacher-centred approach fairly, considering the context of the time, and he refrained from judging her practice by contemporary standards. After recounting several incidents in which the teacher administered the strap to her students, Alan concluded, "at the time, corporal punishment was seen as a reasonable and justified means of punishing negative behaviour in the classroom." Alan's ability to seek explanations rather than rush to judgment demonstrated a sophisticated historical perspective on past practices.

John led the class through a reading about attempts to exclude Chinese students from schools in Victoria, British Columbia, in the 1920s. Laura facilitated our seminar discussion about the experience of First Nations students in British Columbia residential schools. Both student teachers explored the implications of these historical events for teachers and schools today. John found examples of the continued marginalization of racialized minorities in contemporary curriculum and textbooks. He challenged his peers to consider ways in which their own instruction could be respectful, full minded, and inclusive. Laura shared the federal government's official apology to First Nations students who attended residential schools, and discussed the work of the Truth and Reconciliation Commission. This led to a discussion about teachers' roles and responsibilities in attending to the legacy of this experience for the families of their First Nations students. In this way, both student teachers demonstrated Seixas and Morton's (2013) assertion that "the ethical dimension opens students' eyes to a crucial way in which past experiences can shed light on present-day issues" (p. 182).

Conclusion

It was challenging for the student teachers to consider the implications of their emerging historical understanding on issues facing contemporary schools and on their own teaching practices. Matthew's final project was an examination of change and continuity in schooling for the disabled in which he traced policy and practice through "the three I's: isolation, integration, and inclusion." In a written reflection, he insisted that "improper practices

have resulted in major damages to individuals and communities," and argued that these need to be appropriately addressed. At the same time, he acknowledged that school systems faced enormous challenges in meeting the needs of all students. He wondered what could reasonably be expected of teachers under the current policy of inclusion that expects them "to offer services that were previously provided by trained specialists and specific institutions" and can result in frustration "with their ever-growing responsibilities" and lack of support. The student teachers' historical inquiries forced them to confront difficult realities associated with teaching: teachers cannot always meet the needs of all of their students; "best practices" may only work in some circumstances for some learners; effective teaching strategies are always dependent on context. Historical inquiry illuminated the complex and contingent nature of the pedagogical judgments teachers make, and demonstrated the need for continued professional learning. For the student teachers, this insight was resonating and liberating.

Anderson et al. (2006) found that when university history courses foregrounded primary-source analysis and engaged students in disciplinary thinking, they empowered those students. They gave them a voice and authority to make interpretive choices in their own inquiries: "Thus these courses were not only assisting students to deploy the disciplinary practices of source work but were also backing students' own agency in analysis and interpretation" (p. 261). In this course, student teachers were empowered, given autonomy to question contemporary values and easy generalizations about "best practices" in teaching. In their final course reflections, all the students commented on the extent to which their historical understandings would inform their thinking on current educational issues. Laura wrote, "My historical knowledge can help me understand future changes and view them with a critical/informed eye." Jared stressed that "teaching is not a one-way change from then to now ... ideas come, go, resurface, and looking at history can help us assess the value of current trends in teaching." Alan stated that the course had "prepared me for future changes, to understand their roots, and to acknowledge their strengths and weaknesses."

Historical thinking is essential for the critical reflection required of all teachers in their professional practice. Riggsbee, Malone, and Straus (2012) argue:

> There is not an algorithm or formula that teachers can rely on to provide answers for every problem that arises in the classroom …. Instead, our goal is to shape future teacher-leaders through rigorous liberal studies in multiple disciplines within a teacher preparation framework that promotes and sustains engaged citizenship and service, critical reflection and decision making, advocacy for students and families, and

commitment to a culture of fairness and compassion" (p. 12).

This is why historical thinking plays a crucial role in the liberal education and preparation of teachers. Professional educators understand and appreciate the historical legacy of schooling and aspire to create a better future.

References

Alberta Education. (1997). Teaching quality standard applicable to the provision of basic education in Alberta. Ministerial order 016/97. Retrieved June 11, 2015 from https://education.alberta.ca/department/policy/standards/teachqual/.

Anderson, C., Day, K., Michie, R., & Rollason, D. (2006). Engaging with historical source work: Practices, pedagogy, dialogue. *Arts and Humanities in Higher Education 5*(3): 243-263.

Calder, L. (2006). Uncoverage: Toward a signature pedagogy for the history survey. *Journal of American History 92*(4): 1358-1370.

Carbone, P. F. (1980). Liberal education and teacher preparation. *Journal of Teacher Education 31*(3): 13-17.

Clark, P., Ed. (2011). *New possibilities for the past: Shaping history education in Canada*. Vancouver, BC: University of British Columbia Press.

Clark, P. (2013). History of education and passages to the future. In T. M. Christou and S. M. Bullock (Eds.), *Foundations in teacher education: A Canadian perspective* (pp. 30-45). Ottawa: Canadian Association of Teacher Education.

Nosich, G. (2012). *Learning to think things through: A guide to critical thinking across the curriculum, 2nd ed*. Boston, MA: Pearson.

Riggsbee, J., Malone, D., & Straus, M. (2012). The role of liberal education in preparing tomorrow's teachers. *Peer Review 42*(2): 12-15.

Roth, M. A. (2014, June 3). A world without liberal education. *Inside Higher Education*. Retrieved from http://www.insidehighered.com

Seixas, P., & Morton, T. (2013). *The big six: Historical thinking concepts*. Toronto, ON: Nelson Education.

Sutherland, N. (1997). *Growing up: Children in English Canada From the Great War to the age of television*. Toronto, ON: University of Toronto Press.

ED TALKS

conversations in education

BE PART OF THE CONVERSATION.

A Conversation between
Faculty about Teaching and Education.

This series is a regular monthly show on Lethbridge Shaw
Channel 9. Showtimes are daily at 8am, 3pm and 8pm.

WATCH THE LATEST **EPISODE** ON **Shaw)**   WWW.ULETH.CA/**TEACHING**CENTRE/**VIDEO**

Light
ON TEACHING

We want your submissions.

We accept submissions of articles throughout the year and publish in September. All submissions due by June 13, 2016.

Here are some ideas for submissions:

• Analysis and reflection of teaching practices
• Moving to a blended teaching space
• Teaching and learning environments
• Experience with group work
• Innovative methods of engaging large groups
• Igniting student conversation
• Sparking student motivation and innovation

Submit your articles, ideas and questions to
teachingcentre@uleth.ca

Teaching
CENTRE

University of
Lethbridge

FIAT LUX

Teaching Centre
University of Lethbridge
4401 University Drive W.
Lethbridge, AB, Canada T1K 3M4

Phone: 403.380.1856
Fax: 403.317.5052
email: teachingcentre@uleth.ca
website: www.uleth.ca/teachingcentre