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Editorial

Patrick Lewis

University of Regina

As I sit here in my office writing this, we are racing toward the closing days of autumn soon to begin the long journey through winter toward vernal equinox. I looked out the window earlier this morning and the sun was low in the prairie sky. However, it was still providing warmth, including enough heat to dislodge the extraordinary rime frost gathered on trees and bushes from unusual heavy fog last week. The layers of crystalized ice gently fell to the ground, joining the thin layer of snow. Our autumn 2018 issue of *in education,* not unlike the ice crystals, is gently joining our long line of journal issues. However, what makes this issue extraordinary is that it is an issue that is given over to some essays. As Cyntia Ozick (1998) wrote, an essay is a thing of the imagination, but it embodies reflection and insight, and it is possessed with a power toward agreement, even when the reader thinks she is not so inclined.

In Alayne Armstrong's essay, we learn of the inherent narrative imaginings within mathematics if only we open up to the storied virtues of math and cast aside the tendency to see the teaching of math through the narrow, if not myopic, lens of arithmetic. Alayne artfully draws upon the power and thoughtfulness that are at the core of essay writing whereby the reader is taken into a story that is both sensitive and compelling. She then raises the question of authorship in mathematics. Of particular interest is the sharing of some of her research with middle school students and the use of "coloured tapestries to help… illustrate some of the storyline traits of the mathematical work the groups do." The reader will learn just how storied mathematics is, and has been!

In Marc Spooner's essay, we travel through some simultaneously familiar and startling terrain in the academy and the wider world. It is to invoke that old adage that one must travel afar in order to return home to see things anew—Marc calls out the quotidian so that we might stop for a moment and attend to what has been, and is happening while we have been toiling away in the academy. He urges us to not be distracted by the high profile stories of outed researchers or journal hoaxes, but to recognize and take heed of "the growing, high-stakes audit culture within the academy that results in extreme pressures to publish and, for some, the resort to cooked-up findings." Marc draws a straight line from these pressures to the corporate shift in universities and the drift, if not swift movement of the academy into an audit culture. Where the University has "spawned a whole class of middle-management auditors (accountants, in function) who have replaced faculty administrative positions," and armed themselves with tools to measure and calculate performance and outcomes. I can hear a fragment of Leonard Cohen's song, *The Future*:

> *Things are gonna slide*
> *(slide) in all directions, won't be*
> *Nothing (won't be) nothing you can't*
> *Measure anymore.*

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Marc calls out what is, and has been, happening in universities around the world noting that if the academy, that is to say academics, do not come together to collectively push back against the regolith creep of the audit culture our academic freedom and much more will be subsumed.

Kerry Robertson, in her essay, delves into the exploration of professional collaboration amongst teachers through the notion of trust and curiosity. She attempts to look at what Huebner characterized as the vulnerability that is teaching; however, that ‘‘vulnerability can be endured in a community of care and support, one in which members take time for telling and listening to the stories of each other’s journeys’’ (Huebner, 1999, p.385). Kerry helps us recognize that collaboration begins with trust, which is “characterized by mutual respect, professional commitment, personal integrity and personal regard,” and is accompanied by curiosity, which “is the commitment of individuals to seek out new and potentially challenging ideas.” We need to listen to each other and hear our stories.

Finally, although this issue has showcased essays, we do have a powerful piece of research included in this issue. Elaine Murdoch and Rainey Gaywish research the effects of Intergenerational Trauma (IGT) on the learning of Aboriginal students in postsecondary settings, investigating IGT as a possible reason for student attrition. They explored the issue from the perspective of trauma-informed education principles (Mordoch & Gaywish, 2011). The researchers utilized a conceptual framework based on an Anishinabe teaching of Four Lodges (directional)—Talking, Planning, Teaching, and Healing. The researchers formulated questions for each Lodge to frame the research on how IGT is understood by students enrolled in select programs for mature Indigenous students. The questions align with the medicine wheel:

The Teaching Lodge— How do you come to know?
The Healing Lodge—How do we bring about positive energy?
The Planning Lodge—What nurturing is needed?
The Talking Lodge—What do we seek to be answered?

The researchers’ findings are encouraging and lay out a path forward in supporting the learning of Indigenous students who may be experiencing the effects of intergenerational trauma.

We hope that you will find this somewhat different issue of *in education* of interest and share the essays and article amongst your friends and colleagues. Enjoy the journey!

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Situating Intergenerational Trauma in the Educational Journey

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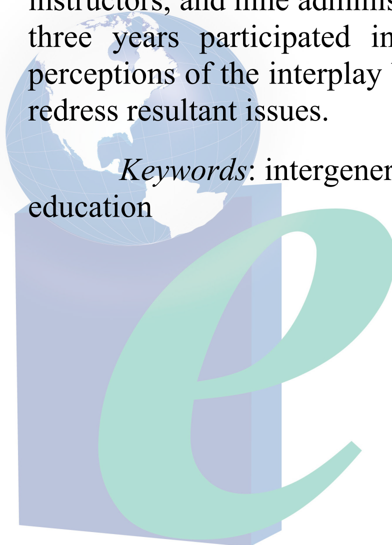
Abstract

The impact of trauma on learning in post-secondary institutions is largely ignored. However, recent studies on how Aboriginal people experience mental health issues are bringing attention to Aboriginal students' experiences of intergenerational trauma (IGT). IGT occurs when the maladaptive effects of an original trauma experience, such as historic trauma inclusive of Indian Residential Schools (IRS), results in unhealthy effects on the first generation being passed down to the next generation or multiple generations. Given the lengthy history of collective historic trauma experienced by Aboriginal people, it is reasonable to expect that Aboriginal students' learning is affected by IGT. As post-secondary educators, we engaged a limited study to further our knowledge of the impact of IGT on Aboriginal students. We were puzzled by Aboriginal students' attrition within university programs—students we believed who were more than capable of success. We chose to explore this issue from the perspective of trauma-informed education principles (Mordoch & Gaywish, 2011). Building on past work, this qualitative study explores how IGT affects the educational journeys of Aboriginal students. A conceptual framework based on an Anishinabe teaching of Four Lodges (directional)—Talking, Planning, Teaching, and Healing—guided our research. The researchers formulated questions for each Lodge to frame our research on how IGT is understood by students enrolled in select programs for mature Indigenous students. We asked about the effects of IGT in the classroom and the resultant problems students face in their educational journey. Sixteen Indigenous students, 10 instructors, and nine administrators employed in Aboriginal focus or access programs for at least three years participated in semi-structured interview conversations. Findings reflect their perceptions of the interplay between IGT and educational experiences and potential strategies to redress resultant issues.

Keywords: intergenerational trauma; post-secondary education; trauma-informed education



Situating Intergenerational Trauma in the Educational Journey

This paper discusses a qualitative study exploring Aboriginal students' perceptions of the impact of intergenerational trauma (IGT), resulting from colonization, inclusive of Indian Residential Schools (IRS), on their educational experience. IGT is the transmission of the effects of adverse life experiences that influence how the individual appraises the world, and can also influence development of ineffective coping skills. The individual who experiences trauma and his or her offspring are at increased risk for further trauma, leading to the first generation's problems being repeated in the second generation (Bombay, Matheson, & Anisman, 2009). Some recent epigenetic-focused studies indicate that IGT may affect subsequent generation.[1]

However, there is no conclusive evidence of transmission of trauma effects in humans. In our roles as administrator and professor in a university program with Aboriginal students, we perceived a critical need to investigate these phenomena to help us understand hardships that some Aboriginal students were experiencing and, in particular, to seek answers to help us respond to incidences of unexplained attrition.

We had observed a chronic pattern of a few students who were failing to submit final assignments despite having performed strongly in the classroom. These were students who had demonstrated interest in their studies, proved to have more than adequate academic skills, and who had also sought out support from instructors and program staff, yet failed to submit final assignments due after classes had ended. Influenced by the implementation of trauma-informed care in health care, we pondered the ideas of trauma-informed education (Mordoch & Gaywish, 2011). Could trauma-informed education and the emerging research on intergenerational trauma be considered together in an effort to understand this observed pattern of student behavior? Although education and therapy are distinct entities, we propose that, in addition to introducing Indigenous content and pedagogy, education must respond to the effects of trauma, both historical and ongoing, within classroom settings. *The Final Report of the Truth and Reconciliation Commission of Canada* (2015) recorded 94 Recommendations for reconciliation, some of which provide significant support for this approach.

Indigenous Methodology

Location of the Researchers

We have worked with mature Aboriginal students from urban and remote areas in an Aboriginal-focused program for more than 20 years. Dr. Gaywish is an Aboriginal scholar and 4th Degree Midewiwin immersed in the study and practice of Anishinabe knowledge traditions. Dr. Mordoch is a settler scholar with expertise in mental health who has both taught and learned from diverse Indigenous students. The research assistant was a mature Aboriginal student, knowledgeable about Indigenous culture, traditions, and contemporary issues affecting Aboriginal people.

The research methodology we adopted is based on an aspect of Anishinabe worldview and an understanding that an Indigenous paradigm comes from the fundamental belief that knowledge is relational. "Knowledge is shared with all of creation . . . It goes beyond the idea of individual knowledge to the concept of relational knowledge" (Wilson, 2001, pp. 176–177).[2] The methodology is based in part on the Midewiwin Anishinabe worldview presented in *The Mishomis Book: The Voice of the Ojibway* (Benton-Banai, 1988), and a 1983 lecture on

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Anishinabe research methodology by Professor Jim Dumont from Laurentian University as well as on the knowledge and experience of Dr. Gaywish, grandmother and 4th Degree Midewiwin (also known as the Grand Medicine Society of the Anishinabe). The method also draws on the Four Directions Teachings.com (2006).

In the study framework, a lodge is situated in each of the four directions: East, South, West, and North. These directions are expressed in the research process as four phases: Talking, Planning, Teaching, and Healing. Each phase articulates a perspective and questions that correspond with the Anishinabe teachings and the traditional medicine of the direction in which it is situated (See Figure 1.) The process starts in the East (situated in lower right quadrant to correspond to directionality and ends with North at the top):

Figure 1. This figure illustrates the Four Lodges, an Anishinabe research methodology that includes four phases beginning in the east and moving to the South, then the West, and finally to the fourth direction, the North (Mordoch & Gaywish, 2011, based on *The Mishomis Book: The Voice of the Ojibway,* Benton-Banai, 1988), audio recordings at Four Directions Teachings.com 2006, and a 1983 lecture by Professor Jim Dumont, Laurentian University.)[3]

Application of the Four Lodges to the Research Study

The Talking Lodge: What Do We Seek To Be Answered? Medicine: Tobacco

We begin in the East, the Talking Lodge. Here we discuss common concerns related to the identified issue. The medicine of the East is *asema* (Ojibway meaning natural tobacco): What do we seek to be answered? (Mordoch & Gaywish, 2011).

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We were guided by oral stories students shared over the years as well as our experience of attrition concerning students who were doing well in other academic indicators of successful progress in their studies. The Calls to Action in the *Final Report* (2015) of Canada's Truth and Reconciliation Commission (TRC) echo what we heard from students. The report calls for improved education attainment for Indigenous people and affirms the critical role of education to address the ongoing, intergenerational impact of Indian Residential Schools (IRS), (TRC, 2015).

Trauma-informed services are organized to enable practitioners to recognize trauma, deliver sensitive care, and avoid retraumatization of the person (Elliot, Bjelajac, Fallot, Markoff, & Reed, 2005). Trauma-informed education is offered in some elementary and secondary settings (see for example, www.childhood.org.au); however, it is generally not integrated into post-secondary education. There are many anecdotal accounts of the adverse effects of IRS and IGT on mental health and social issues; however, few empirical studies have been conducted on IGT in Aboriginal people (Bombay et al., 2009) and particularly on IGT's effects on students' post-secondary educational journeys. We focused our study on understanding perceptions of IGT and its impact on the progress of students in the post-secondary program in which they were enrolled.

Intergenerational trauma. IGT is a reality in Indigenous peoples' lives. Adult survivors who recounted statements about the trauma experienced in the IRS were already second- or third-generation survivors of the IRS system. The introductory notes of the TRC's (2015) *Final Report* state:

> For over a century the central goals of Canada's Aboriginal policy were to eliminate Aboriginal governments; ignore Aboriginal rights; terminate the treaties; and, through a process of assimilation, cause Aboriginal peoples to cease to exist as distinct legal, social, cultural, religious, and racial entities in Canada. The establishment and operation of residential schools were a central element of this policy, which can best be described as "cultural genocide." (p. 1)

Yellow Horse Brave Heart, Chase, Elkins, and Altschui (2011) identified the unresolved collective grief related to historical trauma that accompanies mental health and emotional issues of Indigenous people. Bombay, Matheson, and Anisman (2014) stated that long-term effects of the IRS experience inclusive of abuse have resulted in disrupted community and family relationships and self-destructive behavior. Corrado and Cohen (2003, as cited by Bombay et al, 2009), stated that in "a sample of First Nations Residential School Survivors that had experienced abuse, 64 per cent were diagnosed with PTSD" (p. 10). Research supports the assertion that Aboriginal people experience increased risk for PTSD due to high levels of life stress, poverty, and family violence and instability related to ongoing intergenerational trauma resulting from historical trauma (Bellamy & Hardy, 2015).[4]

Seven Generations prophecy. The teachings of respected Iroquois Elder and scholar Chief Oren Lyons explain the Iroquois Great Law of Peace that contains the Seven Generations teaching.

> The Peacemaker taught us about the Seven Generations. He said, when you sit in council for the welfare of the people, you must not think of yourself or of your family, not even of your generation. He said, make your decisions on behalf of the seven generations coming,

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so that they may enjoy what you have today. (Oren Lyons, Seneca, Faithkeeper, Onondaga Nation)

This Seneca teaching identifies that the responsibility for the next seven generations centers on leadership, vision, and caring. In the traditions of the Anishinabe, the teachings about responsibility describe how actions of one generation resonate into the future for at least seven generations. This is important to consider in relation to the effects of IGT and to educators' responsibility to redress the hardship of IGT on students.

> The Indigenous people, our people, were aware of their responsibility, not just in terms of balance for the immediate life; they were also aware of the need to maintain this balance for the seventh generation to come. The prophecy given to us, tells us that what we do today will affect the seventh generation and because of this we must bear in mind our responsibility to them today and always. (Clarkson, Morrissette, & Regallet, 1992, p. 25)

The time span of seven generations is 150 years. The IRS system operated in Canada from the 1870s to the closing of the last federally run school in 1996. Thus, 150 years from 1996 identifies the impact of IRS into the future for another 130 years (TRC, 2015, p. 1). Our discussions in the Talking Lodge revealed the importance of undertaking this work and its potential effects for the seven generations. Drawing on research on trauma-informed health care, we sought to examine how students perceived their progress and success in post-secondary education was being impacted by IGT. Our hope was to apply what we learned to better inform the support post-secondary institutions provide to Aboriginal students.

The Planning Lodge: What Nurturing (Knowledge and Support) Is Needed? Medicine: Cedar

Information and resources gathered in the Talking Lodge were focused on what approach to take to respond to the broad research question we were asking: How is IGT understood and how is it affecting Aboriginal students' education? Our observations of students' progress in the programs in which we were involved revealed that students and instructors/staff of these programs would be the best people to discuss the issue. We resolved to ask how IGT affects students' educational process in post-secondary education, what problems arise, and what potential solutions might be from their perspective. We chose to use a qualitative research method, which was more appropriate to our research question, to the research participants who were predominantly Aboriginal, and to the available sample size or number of participants. In this second phase, we secured funding and obtained ethical approval, ensuring the research complied with university ethics requirements as well as with SSHRC's Tri-Council Policy Statement on ethics for research involving First Nations, Inuit, and Métis Peoples of Canada.

We determined that the student participants would prefer to speak with an Aboriginal interviewer and we hired a graduate student in Nursing as a research assistant. She is knowledgeable about Aboriginal history and university studies and was able to engage in sensitive conversations about the research topic. The interviews were conversational, fitting with Indigenous knowledge based in an oral tradition (Kovach, 2010). We recruited the participants by poster and word-of-mouth communication. Students granted us permission to review their academic records. The research assistant debriefed within the research team due to the sensitive nature of the interviews. Upon completion of the project, she visited an Elder to process emotions generated by the interviews. Students were provided with guidance to access a

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counselor if they felt they needed support in addition to those already available through the programs in which they were enrolled and the Aboriginal Student's Centre counselors and elders.

To ensure confidentiality, only the research assistant knew the participants' names and accessed students' educational records. Interviews were transcribed and identifiers were removed.

The Teaching Lodge: How Do We Come to Know and Attain Clarity of Mind and Heart? Medicine: Sage

In the Teaching Lodge, we studied the participants' words transcribed from the audio-recorded interviews. The data analysis was comprised of content analysis; identification of key statements, commonalities, and differences among data; and acknowledgment of the relationship of the data to the whole as guided by the Four Lodges framework. To obtain clarity, we worked both independently and collaboratively, meeting many times to discuss the interview conversations and compare our perceptions.

The student sample involved 16 Aboriginal students currently registered in an Aboriginal focus or access university program who had completed at least one year of studies or a program within the last five years. The students were in on- or off-campus access programs. The majority of the students interviewed were parents, or lived in homes in which there were children. The following is a table outlining the student sample descriptors:

Table 1

Student Sample Descriptors

Descriptor	Participants
Gender	14 females 2 males
Age range	20–60 years of age
Ancestry	1 Métis, 4 Oji-Cree, 2 Ojibway, 1 Dene, 5 Cree, 3 Aboriginal*
Years in programs	1–4 years
Living with children	11 students representing a total of 34 children, aged 1–26 years
Employment	2 part-time, 6 full-time, 2 volunteer work
Years in program	1–4 years
Number of VWs	16
Number of AWs	6
Number of fails	20 (one student had multiple fails), 3 students failed due to no paper
Programs	5 off-campus, 11 access/on-campus
Completed secondary education	1 B.Sc. 3 Diploma students (60 credit-hour degree credit programs)
Average GPA	3.05 (range from 2.0 to 4.0)

*Self-identified as Aboriginal; nonspecific group

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The knowledge shared by the student participants. Within the Teaching Lodge, we studied interview conversations to help us understand the issue. Student interviews consisted of eight main questions with related sub-questions that addressed the students' experiences. We began with reasons for enrollment.

Enrolment. Students explained their reasons for enrolling in their program, citing career days and information from encouraging work and family role models. Some did not identify strong supports and expressed that they were challenged by self-doubt. These students recalled reaching a critical point in their lives that generated a desire for a better future, including being able to have a job and pay the bills. As one student put it:

> I just came to a point in my life where I wanted more out of life than just going day to day because I knew that I was capable of doing a lot more than what I was told or believed. And I wanted to break that circle of, of, uh trauma I guess.

Future aspirations. Students had various aspirations linked to their educational goals. Students identified altruistic goals to help in health and child and family services in northern Aboriginal communities and to honor family members who had struggled. Several students wanted to validate traditional knowledge alongside Western knowledge in disciplines such as medicine and art. Students felt their personal life experiences contributed to their capacity for empathy and would help them to be effective helpers in their chosen careers.

The meaning of intergenerational trauma to students. When describing IGT, students spoke of insidious effects that trickled down between people and generations. They described these effects as negative and harmful. One participant referred to,

> the filtering down of injury or damage from generation to generation. It's not a point. It's not something that happens in a point . . . It's a spectrum and it carries on; just like ripples in a . . . pond.

Students described IGT as ongoing, passed on to children and grandchildren. Their definitions and their perspective of IGT expressed great sorrow and compelling images of the challenges experienced in controlling its effects on their lives. In one student's words:

> So I describe it as a strainer with all this yucky stuff inside this strainer and it trickles down, thinking that you're going to hold it all up and you don't want to give that to your kids. But it trickles down anyway.

The students described IGT affecting both their families and themselves. Some were IRS survivors as well as children and grandchildren of survivors. One student explained how the parents' trauma is picked up by the children and is transferred to the next generation as different behavior:

> I guess I would define it as the effect keeps happening because those feelings that say your parents have going through something traumatic and the kids pick up on that. And I think you manifest it, maybe perhaps not in the same way but it could be through anxiety, or . . . you know, in some cases it was addictions and negative coping.

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Students witnessed diverse effects in their families. Many noted lateral violence—physical, emotional, and sexual abuse—that crossed generational lines, with alcohol often involved. One student told this story:

> My auntie, she went to the same residential school. My auntie used to hide my mother under the bed while they grabbed her and took her into this room and did a lot of stuff. . . . And I remember the time I was sleeping; I must have been like 9. Having a good sleep. All of a sudden I just felt something slap me right across the face. I just felt it . . . . and I seen … my mother walking out the door. And one day, after she left, my auntie told me what they did to her. So it just probably—'cause it affected her, the trauma, and now she did that to me.

All 16 students interviewed believed they were experiencing IGT effects. Students discussed the damaging effects and their passion to end the cycle of trauma. One student said, "Coming out of IRS, I had no ambition and [I] lacked self-confidence. I wanted to break out of the circle of trauma." She described her mother as being unable to be affectionate or to say "I love you." She saw herself reflecting that behavior onto her own child. Another student described IGT effects in the following way:

> You can't believe everything that you think because sometimes it is not the truth. And I thought OK, it really, it made me think about where my life was going and what I was doing that I didn't think . . . was harmful but it was. Like, um, the communication was really poor with me because I shut myself out a lot.

Many of the students learned about IGT through firsthand experiences that they struggled to articulate. One student noted,

> I have a lot of pain and anger, shame. What they did to my mother, she did that to me. So I've suffered a lot of emotional, physical abuse. . . . When I say "they," I said that she went to IRS. All my family went. And her, her mother went. And her sisters, her siblings, all of them all went. But they, when they received their [IRS] monies, it's like, uh, it's not enough for the pain they caused her, the dysfunctional family because there's so much alcoholism. And that's why we're so, not close today.

The impact of intergenerational trauma on the students' educational journeys. As students discussed their experience of IGT and their educational journeys, some disclosed histories of poverty, family dysfunction, child welfare involvement, alcoholism, and drug use in addition to experiences with racism and lateral violence that took place before and during their university studies. For some, IGT was like carrying a burden that could be motivating and conquered. Others described it as overwhelming. Students who were able to see positive effects, such as motivation to succeed, noted that these positive effects were accompanied by painful memories. For some, IGT issues became the driving forces that motivated them to pursue higher education. One student explained,

> I applied to get into medicine through a special panel that accepted Aboriginal students, so it was a special interview. And it took me 4 years to get into medicine. I applied every year for 4 years. And in the panel they asked me what it meant to be Aboriginal. And I had no idea. I felt like a real fraud applying to this category. Mainly because I didn't know anything about my heritage or, um, like all I knew was about comments that I'd had. And I

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> knew that I wanted to change. And I knew that, you know, I didn't want to live the kind of life. . . . I think things could have been a lot different had my parents had a different view on education and different view about themselves and their heritage.

Students recognized that higher education had previously been unobtainable, and therefore, some parents did not value it; students sometimes felt parents undermined their educational pursuits. One student made the following comment:

> Neither one of my parents ever really graduated. So for them, their big goal was just to have me graduate and after that it didn't matter. . . . I was the first one in my family to ever go to university. . . . But then when I started going to university, it was almost as if they started feeling like, um, like not good enough. Like I was on a different level than them. And so they, all of a sudden, looked at me differently and were almost mean and … put me down to try.

In addition to carrying the burden of IGT as a known risk to their success, students struggled with its effects manifested as self-doubt, feelings of incompetence, living with alcohol and addictions, difficult family dynamics, and difficulty coping with the stresses and challenges of being a student. As one student said, "If you are in, in the middle of a trauma, you don't have the energy to access support, I don't think. The personal energy."

Students experienced difficulty organizing their schoolwork and dealing with personal problems. One student observed, "Because of trauma you kind of have your negative background. So, as a result, you would, um, just get lost in your own work because you kind of procrastinate and do other things instead of actual school work." Another interviewee commented that in their view, without support, Indigenous people often feel,

> incapable of succeeding because they look around them and they see a lot of people are where they are in life, where they feel they should have been. And so, and I feel that with that in mind, a lot of First Nations people don't have that support. Like the mentors, the people to guide them along the way to get to where they want to go.

The student participants explained that their self-doubt emerged from life experiences wherein they felt put down and faced with expectations, which were lower for them than for non-Aboriginal students. One student described this effect in the following way:

> How it affects me, is that I feel that I'm not worth it, you know. I feel like okay, well I'm just another stupid Indian, you know, that I won't be able to achieve. And then there's another part of me saying "I can do this. Show these people!"

Students perceptions of IGT in other students' behaviours. Students recognized behaviors in other students that they attributed to IGT.

Lack of confidence. Students could present as shy, aloof, or fearful of asking questions in class. As one interviewee explained:

> Many IRS survivors do not have the confidence in themselves when it comes to being in a learn[ing] environment. This has a lot to do with the severe repercussion and strict discipline observed or experienced when you fail to present your knowledge of instructions. This scenario is a cause for many individual's lack of reading and writing

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skills; they are afraid to have that known to instructors, and many will not challenge themselves to learn and/or do not want to be humiliated in front of fellow students.

Family disconnection. Students perceived family disconnectedness as another effect of intergenerational trauma in themselves or fellow students. Many families were described as disconnected and unable to provide meaningful, consistent support. Current and past relationships between men and women were often described as unhealthy, abusive, and damaged by alcohol. Dysfunctional relationships identified as part of the IGT experience had a detrimental effect on students' progress. Some families interacted only when alcohol was involved. When students had problems with their family relationships, they felt lost, as one student described:

> I wish I had what I see what other families have, but I can't. I wish I was close to my grannie. . . My mom and my grannie never got along. My grannie's trying to gain that back, but there's a part of me wanting to hate her because she wasn't close to her own daughter

One interviewee observed that one student's struggles in school were attributable to family breakdown:

> Like all her family drinks and does drugs, and her brother just got out of jail, um, for doing car thieves and like car stealing. . . . A lot of drugs and drinking, I see a lot of my friends surrounded by and affected by… I guess some people want to be in school too, but there's a lot of BS around drinking and drugs and having children and men and women not being able to get along that it just, um, hurts their academic success.

Stress triggers. Another student described the impact of intergenerational trauma on students when the stress of academic expectations gets intense. The student reflected that for some students, because their parents—as a result of their own trauma—were unable to instill what they did not themselves possess, their children were vulnerable to react negatively to the pressures and expectations of the academy:

> Because of the negativity that comes from such trauma and seeing how their parents weren't exactly like top-class citizens because of their own problems, I would say that they (students) would lack certain . . . . traits to succeed in university. Like just being organized, being positive. Don't always be pessimistic. . . . Some students are quite good at hiding it well. But it's when they get really stressed out, like exam week—that's when you start seeing the effects of such trauma throughout the generations. You . . . wouldn't know it as an outsider, but if you witness it yourself, you could recognize it. Usually it's by they're just more angry or more negative.

Fragmented identity. As a result of IGT and colonialism, students often knew little about their history. University studies helped students articulate their personal and family experience of IGT. They were emotionally affected as they gained understanding of historical trauma and how it contributed to current problems. One of the participants told the following story:

> When I was first learning about Native studies and historical trauma, I got angry. I was blowing up at people and, if a White woman looked at me the wrong way at a store, I just felt a lot of pain. . . . Learning about how unfairly my people were treated makes me angry.

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Sometimes family conflicts arose when students were reclaiming their heritage. One student explained that her family members negated their history and belittled her interest. She feared her children would sense this negative stigma toward Natives from their own relatives:

> I feel like there's always that cloud kind of hanging around. And . . . I understand why they feel the way that they do, but it's just, like, it's so ingrained in them. I don't know how to change their views on, you know, Native people aren't just drunken Indians on the street…. You're Native and yet you're not a drunken Indian on the street. And, but to them, they're not Native. They do whatever they can to not be.

Common factors identified as effects of IGT. The common factors students identified as the personal effects of IGT on their life journeys are listed below:

- Adverse childhood experiences including trauma, violence, and abuse;
- family disconnection, both current and past, and family service placements;
- family communication problems;
- personal and family problems with alcohol and drugs;
- horizontal violence in families and communities
- unresolved anger, shame, grief, and loss;
- negative self-concept such as self-doubt, low self-esteem, and low confidence;
- ongoing struggles including living with fear, loneliness, hurt, and pain in mind, body, and spirit;
- mistrust and racism toward non-Aboriginal people; and
- internalized racism and memories of feeling degraded.

Post-traumatic growth has been identified as positive cognitive, emotional, interpersonal, and spiritual consequences that follow a traumatic event (Tedeschi & Calhoun, 1996). Despite the negative impact of IGT, and although some students said there was nothing positive about it, some students identified positive factors that helped them survive:

- Empathy and compassion for others in adverse circumstances,
- assertiveness for self and Indigenous rights,
- reclamation of Aboriginal identity,
- impetus to start the healing journey,
- awareness of history and effects on Aboriginal people,
- motivation for education,
- responsibility to role model for community and children, and
- self-discipline.

Issues in the Classroom. Students identified five issues related to effects of IGT in the classroom: fear of stigma, anger and defensiveness, healing needs, insufficient background education, and resentment from community and family.

Fear of stigma. Aboriginal students often felt stigmatized and as if they were viewed differently than other students. Students may feel uncomfortable in class settings and feel that it is not a safe place. One student observed that for some:

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they're afraid to sometimes even come to class, you know. Like that's what I experienced last year. And, uh, with whom they just were nervous. And it's kind of, you have to squeeze into a little seat and some of them are, like I said, don't feel too good about themselves and kind of you don't see them again.

Anger and defensiveness. Some students are angry and defensive, feeling that other students have had an easier road. One participant said of a student:

> He's very defensive about, um, being Aboriginal. And sometimes people will make comments to him that are relatively innocent, but he'll read stuff into it. . . . And, yeah, we get a lot of comments, like our education is free and paid for, which it's not.

Healing needs. Students may not have begun their healing journeys and may be vulnerable to issues that arise, for example when completing personal life maps or watching videos with sensitive content. Class lectures, topics, and assignments can trigger feelings of distress associated with unhealed traumas. One participant acknowledged,

> Anger, there's lots of crying. There's lots of healing. How else would it come out? Probably in their stories that they write. Their essays. And it's kind of like a healing journey in this program I find. Yeah. Because you have to express anger.

Another student added:

> Most of them are unaware that they have high anxiety because it's become so normal. It's been normalized for them. That this is how they've dealt with their lives for, you know, 10, 15, 20 years. They're used to operating at that level

Students reported that some learning assignments helped facilitate healing for them. One student noted:

> I did the positive and the negative part of my parents. Um. My dad being the good role model, um, even when they drank, he was funny. My mom was the negative. My dad was Popeye. My hero. Like and then, uh, gasoline colors represented anger. My mom. Like there's different, and then there's part where, oh yeah, and then there's an old dad in a building that looked like it was going to fall down. Well that was our family separating. Like there's a lot of metaphors in there.

Inadequate educational backgrounds. Students were disadvantaged by their experience of inadequate preparation for university education. Often they had to leave their communities for high school. Students sometimes had not learned good study skills prior to their secondary education, and some of their families did not value education. A participant explained:

> Like the studying and working. They just don't know how; because coming from a community where it's only from kindergarten to Grade 8, you know, and then that's basically it. Or else you have to leave your family to come. So . . . many dropped out because they didn't have that discipline. And then they would have to relocate in order to get their GED and then come back and then they still don't have that discipline of how to study. It's just that they don't know how to kind of thing, because of the, uh, lowered education levels up North.

Similarly, another student offered the following thoughts:

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> I didn't have any mentors or people who could help me. And I think that there are a lot of Aboriginal people who have, um, no hope. It's hard for them to get through school and then what comes after? Like they don't know. So I think you need a lot of help and guidance to get you through. And to help you. Because, I don't know, I'm not so sure that our parents are as equipped to help us.

Resentment from family and community. Students perceived that horizontal violence resulting from IGT manifested as resentment from family and community members toward students. In one student's words, that resentment manifested as,

> a lot of lateral violence. A lot of competition. But it just, it just makes me strive even harder to do what I have to do for myself. And to be a better advocate for myself. And it has helped me to stand up and fight for what I want; to say, well I deserve this, because of the fact that I am First Nations and I come from a community.

Parents who had few opportunities for education themselves lacked skills to help their children. Sometimes parents resented it when their children sought higher education and saw those children as becoming like White people and feeling superior. One student described the following:

> A lot of students come from families that are like, "You're just trying to be a White man going to school. And you're all educated now and you come back to the reserve and . . . " They think that you think you're better than them. So there's like that striving student.

Students' perceptions revealed the reality of their life situations related to IGT and their education journey. For most, those situations were seen as obstacles.

The Healing Lodge: How do we Bring About Positive Energy? Medicine: Sweetgrass

Within the Healing Lodge, we ask ourselves the following questions: What do we understand about the concerns and solutions related to our research question and how do we bring about positive energy to work with this situation? Intergenerational trauma has far-reaching effects on families, children, grandchildren, and communities of survivors of the IRS (TRC, 2015). Students reported that their parents were often not able to assist and encourage them with homework. Considering that the Indian Affairs 1950 report on IRS documented that only half of each IRS year's graduating class achieved a Grade 6 level, and that survivors' accounts report only Grade 3 skills, as well as others that identified not being able to read or write, it was inevitable that the parents who attended IRS would have great difficulty in assisting their children (TRC, 2015, p. 193). The lowest levels of Aboriginal education are reported in areas with the highest levels of residential school survivors, First Nations people living on reserve, and Inuit. In addition, lack of skills and education left the parents in situations of chronic unemployment or underemployment, leading to deeper levels of poverty (with incomes 30% lower than those of non-Aboriginal people) for longer periods, increased violence, and higher prevalence of addictions than among non-Aboriginal people (TRC, 2015).

In the Healing Lodge, given what we know about the healing need, we determine what balance can be brought to address the research problem. To begin, we consider the students' words and respect their perceptions about how to manage the effects of IGT within education.

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Students' advice for instructors and program planners about the effects of intergenerational trauma.

Acknowledge IGT and effects and build positive relationships. Students noted that the first step is to acknowledge IGT and its effects in the classroom. Developing personal relationships with students and inquiring about how they are doing, listening, and reaching out to them are all efforts that are appreciated. Within classes that address personal sensitive experiences, students must feel safe. These classes often help students in their personal healing and thus in attaining their career goals. As one interviewee noted:

> Instructors, program planners, need to realize the reality of intergenerational trauma affects everybody; it's very real and alive. As survivors of IRS, many are beginning to acknowledge the traumatic effects; however, there are no resources on the local level to assist in moving forward away from this mentality that we are victims. Teachers and planners too, need to feel the hurts and pains, they need to show compassion and go through the emotions with students as teachers, otherwise this cycle of trauma will continue. . . . Most importantly, our traditional beliefs in our spirituality need to be revived without [our] being condemned as pagans or heathens.

Another participant added:

> Like I'm just starting to be more aware of it now because I'm being more educated about it now. So that's what, I like to see more happening is that maybe have a class on intergenerational effects because then that would be good for people who want to know more.

Understanding the historical and current context of Aboriginal peoples' inequities in society is crucial for instructors and program planners. Yet there seems to be some resistance to it, as one student observed:

> I don't think people are as patient when it comes to Aboriginals. Like we see Jewish people in concentration camps and we feel bad for them. And yet . . . you hear comments like, well, they got over it pretty quick. But they were a very highly educated group of people before that happened and it was. . . . 10 years of abuse versus like a hundred years of being put down and, um, not necessarily having a lot of education to begin with. . . . So, you know, we couldn't just bounce back and all become doctors and lawyers. . . . I just think that there's a lot more that can be done as far as teaching people why this has happened. Why you can't just get over it. And why you need to be more sympathetic and help. So instead of, you know, seeing just like a drunken Indian on the street, see that person, like see them as a person and see why they may have ended up there. You know, whether they came to Winnipeg from a reserve to try and have a better life—but when you're not equipped with an education, it's hard to find a job. And all of a sudden you kind of get lost in the system and you lose hope.

Students perceived trust as an essential component of human relationships within the educational experience. The effects of intergenerational trauma contribute to students' experience of a deep mistrust of non-Indigenous people, and a lack of belief that they will find understanding and safety in the classroom. Many of their recommendations indicated a crucial need for action directed toward the building of trust between students, instructors and program

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planners. Student recommendations for instructors and program planners to manage effects of IGT in class are listed below:

- Build trust,
- be approachable and use clear language,
- reach out by listening and helping to build self-esteem,
- provide lecture notes,
- note students' different backgrounds and needs,
- note that trauma survivors may need counseling,
- connect students with academic and counseling supports,
- keep an open mind,
- integrate Indigenous beliefs and offer the circle format for class,
- acknowledge the reality of IGT and learn about it,
- be aware of challenges arising out of moving from reserve to city,
- recognize that people may have difficulty coping with new systems,
- develop a compassionate view toward the complexity of Aboriginal peoples' life situations,
- stay connected with Aboriginal grassroots situations,
- recognize the stigma related to access and Aboriginal-focused programs,
- acknowledge resentment toward Aboriginal student funding by both Aboriginal and non-Aboriginal students—not all Aboriginal students are funded,
- be cautious about singling out Aboriginal students because they may be embarrassed,
- realize that students want accessible resources, not special treatment, and
- facilitate use of exercise facilities because students may not be able to afford them.

Students did not want to be perceived as receiving special treatment. One elaborated on this point, saying:

> I found actually my professors have been very understanding, you know. But I don't think we should get special treatment or anything. But there definitely needs to be supports in place to help people who've gone through this, who are suffering from trauma even years after, you know, to get through it and to build their self-confidence. No, we can stand on our own two feet.

Instructors and planners need to be aware that First Nation students who are funded experience resentment from both Aboriginal and non-Aboriginal people. Several students reported this dynamic. One student recalled the following:

> Once like I was even discriminated, too, because of being Treaty. And my friend wanted to send her boys, they're older now, they're going to school now but they're paying for it, eh. And they said, "Oh that must be nice to have your education handed to you." Handed? No. Got to ask for that funding. Not every student is funded 100%. And even then you still got to work for your marks. So it's not handed. Yeah, I said, and then the only way [I am] on treaty is because my mother never married. . . . I says, well, see not being married, that comes with a little label, too.

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Students determined to succeed. Students expressed determination to succeed and overcome obstacles in their education, and some expressed strong pride in the accomplishments of their people. In one student's words,

> Because, we, all of us girls, are still fighting. We're still coming back next year, you know. We're not going to let these little people beat us down, you know. Like we're fighting for our future and we're fighting for our children's future. And … we came a long way in the last 150 years, you know what I mean. If we can do this much in that amount of time, I say, kudos to us.

The following is a list of student-identified, self-help strategies:

- Identifying with traditional culture: spirituality, sweats, smudge, ceremonies;
- finding mentors: family, peers, academics;
- seeking out elders, counselors, and helpers;
- becoming self-aware of needs;
- standing up for my rights;
- having a center for Aboriginal Health Education;
- screaming, a traditional way of healing;
- integrating my learning into my healing journey;
- taking risks in education;
- sharing with others; and
- being resilient—life goes on.

Some childhood strategies that had been used helped students minimize problems within their education. One student recalled the following:

> There's a mechanism, right from abuse and stuff, right. So it's like . . . I don't remember anything really from my childhood. I can remember small pieces. So that skill has helped me as a university student because I can separate myself from the upheaval. And then cry it off and then OK, now I can do, you know. And being resilient. . . . I can adapt to things, which happens to be what happened in my childhood. I can get to, can be in a different environment, and adapt really quickly because of how I lived.

Administrative staff and instructors' perceptions of overcoming effects of IGT. When asked what might help students overcome the effects of IGT within education administrative staff and instructors expressed key concepts to consider in the following response:

> Part of multigenerational trauma is unresolved grieving. And so, we just, we never really grieve and then we, you know we're re-traumatized and re-traumatized. I think that grief work is very important, and I don't think we do enough of it. . . . At a certain point it's not, it's not healing, we move beyond healing to wellness.

An Aboriginal respondent added,

> The traditional teachings, uh, experiencing, participating in ceremonies, learning about history, . . . our own histories, not just non-Aboriginal Peoples' version of our histories, all

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> of that is, are aspects of educational strategies that, that will address intergenerational trauma and help students move through it. And stop it.

Several strategies that were noted by staff as helpful to students in overcoming the effects of IGT are listed below:

- Counselling and academic advising;
- transition-year programs;
- basic literacy skills;
- research on student success factors;
- education on IGT and history for administration, faculty, and students;
- mentoring;
- traditional teachings and sharing circles;
- better resources for off-campus students;
- high expectations of students;
- addressing "social passing"; and
- grief work.

Staff and instructors stressed that the administration has influence it can use to address IGT and its impact on students. Important factors to consider include dedicated space for Aboriginal students; programming that focuses on wellness with life skills training; Elders, academic, and counseling supports; increased awareness of IGT throughout education; and enhanced education for faculty. Hiring more Aboriginal staff means visible role models are available for students. Systems-level recommendations for administrators included developing strategies for effective teamwork, especially sharing information and following through with students, and supporting personnel, instructors, and faculty working with Aboriginal students. Education must be recognized as an essential element in healing and recovery from IGT.

Trauma-informed approach to education is crucial for mitigating the effects of intergenerational trauma. Research supports the suggestion that family instability, adverse childhood experiences, family violence, and substance abuse are prevalent in Aboriginal communities (Bellany & Hardy, 2015; Yellow Horse Brave Heart et al., 2011). These factors were all described as effects of IGT by the student participants. Students experience pressures resulting from these factors in addition to stress related to their schoolwork. It is crucial that the effects of IGT on student performance be understood, and that the reality of accumulative trauma experiences in students' lives be accepted as truth. Achieving that goal will require taking a trauma-informed approach to education in which all people interacting with students understand IGT and are able to respond from a healing perspective. Duran and Duran (1995, as cited in Menzies, 2007) posited that problems have become part of the heritage due to the decades of forced assimilation. A trauma-informed approach blended with cultural teachings by Indigenous teachers will help students mitigate the effects of IGT and heal—ideally, enough to attain their educational goals (University of Calgary, 2012).

A program intended to build collective teacher capacity to incorporate Aboriginal knowledge, language, and culture into a caring curriculum that considers what is happening in students' lives was successfully piloted in a Canadian First Nations high school, with encouraging results, including improvements in attendance, decreased discipline incidents, increased credits earned, and higher numbers of graduates from high school (Mombourquette &

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Head, 2014). These strategies can be adapted to post-secondary education. Students with IGT experiences require appropriate supports to maximize their strengths in their educational journey to continue to heal and be part of a new generation that can contribute to wellness in their communities (Cavanaugh, 2016; McInerney & McKlindon, n.d.; University of Calgary, 2012).

Within the Healing Lodge we contemplate this knowledge and how to use it in our relationships with students and our educational practices and policies.

Final Words

Aboriginal post-secondary students spoke from their hearts about IGT's effect on their educational journeys. Program instructors and administrators considered strategies to mitigate IGT's impact on education. An Indigenous framework and worldview guided the study. The study question arose from our concern that students did not complete assignments and subsequently failed courses in which their participation and performance was otherwise satisfactory. Our conversation interviews with participants support the supposition that IGT is a significant factor many Aboriginal students experience in post-secondary studies.

Although the discussion of IGT and its impact on education is in its infancy, study participants agreed that this issue requires recognition in post-secondary education and that education is a component of healing. All identified a need to sensitively engage with material about colonization and the impact of IRS. In efforts to employ improved academic and student support models, trauma-informed education must be implemented to assist students, faculty, and administrators to build trust in interpersonal relationships. Building on the resilience and survival skills of Aboriginal students, educators and post-secondary institutions can create stronger educational responses that foster healing from IGT and, consequently, educational success. Trauma-informed approaches implemented in primary and secondary schools should be used in higher education institutions to assist Indigenous students to manage the historical and intergenerational trauma that impacts their educational experience (Ontario Federation of Indigenous Friendship Center, 2016). Trauma-informed education assists Indigenous students to learn about the effects of colonization on their lives, families, communities, and educational journeys. Non-Indigenous educational workers trained in trauma-informed principles become sensitive to the trauma issues Indigenous students endure.

We urge educators to study the Calls to Action in the 94 Final Recommendations of the TRC (2015) and the United Nations' (2008) *Declaration on the Rights of Indigenous Peoples*. We believe the Calls to Action converge with our study results, and call for more attention and resources that address the root causes of trauma affecting Aboriginal students. Culturally safe, trauma-informed approaches will help to mitigate the impacts of IGT on Aboriginal students in the academy. We believe that listening and responding to the voices of Indigenous students is a step forward in the decolonization of educational systems and will eventually contribute to the development of Indigenous scholars and the Indigenous renaissance identified by Battiste (2013).

Endnotes

[1] Recent epigenetic-focused studies examining the cumulative physiological and behavioural effects of trauma support the idea that trauma can be embedded in DNA and transmitted inter-generationally across multiple generations. See Bombay, Matheson, & Anisman, 2009, 2014. Yehuda (2018) notes this has not been established in

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humans. The intergenerational transmission of trauma may also assist the organism to adjust to adverse circumstance p. 252).

[2] For details on the Four Lodges approach used in this study, please see Mordoch and Gaywish (2011).

[3] Regarding the use of Aboriginal versus Indigenous in this paper, we decided to use Aboriginal in this instance. We did have an issue in the research process where a student who is Indigenous from elsewhere in the world wanted to participate, and we discussed whether to include other Indigenous participants (other than Aboriginal). We decided to limit student participation to Aboriginal Canadian students. Aboriginal is still the legal definition in Canada for First Nation, Métis, and Inuit.

[4]See Endnote #1

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The Authoring of School Mathematics: Whose Story is it Anyways?

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Romeo and Juliet died. Period.

Of course there is more than that to the tale of Romeo and Juliet, the famous star-cross'd lovers who were ultimately unable to overcome the obstacle of their feuding families. However, were it a tale told in school mathematics, a subject that traditionally privileges the final answer and not the journey along the way, "Romeo and Juliet died" would be the whole story.

Mathematics weighs heavily on students in our educational system. It is a subject with a reputation as being difficult and abstract, a solitary task meant only for those who have a natural capacity for it (Lafortune, Daniel, Pallascio, & Sykes, 1996; Sinclair, 2008). It is perceived by many students as a series of rules imposed by an outside source, with little recognition that student thinking itself can generate mathematics. If "the only things mathematicians can be supposed to do with any certainty are scribble and think" (Rotman, 2006, p. 105), then in many mathematics classrooms most students are confined to the role of scribblers: writing, copying and calculating, rather than creating, explaining, and thinking. Yet mathematics itself is a living and creative act (Boaler, 2008), and mathematicians themselves often collaborate in their work (Burton, 2004). What, then, is holding school mathematics back? As educators, are we so conditioned to expect the act of mathematizing in school to proceed in a certain abstract, formalized way that we are neglecting other means by which mathematical learning may emerge? What if we shifted our conception of what students do in school mathematics to be an act of storytelling, where we take the time to admire how students tell their stories, take pride in how they keep their audience engaged, or, on a deeper level, the themes and greater truths they touch on in the telling?

Mathematics and Authoring

Who authors mathematics? There is a long tradition in Western thought, stretching back to Plato and his ideal forms, of mathematics as authorless, as an eternal absolute, and that it is only through thinking and theorizing by an elite group (i.e. mathematicians) that its laws and axioms can be uncovered. The rest of us attempt to learn the rules and then apply them. Lakoff and Nuñez (2000) call this the "standard folk theory of what mathematics is for our culture" (p. 340), and they argue that its influence has had a number of negative effects:

> It intimidates people, alienates them from math, maintains an elite and justifies it. It rewards incomprehensibility, and this inaccessibility perpetuates the romance. The alienation and inaccessibility contributes to the division in our society of people who can function in an increasingly technical economy and those that can't – social and economic stratification of society. (p. 341)

In reality, mathematics is itself an invention, a human process developed and refined by various societies throughout its history. Lakatos (1976), the philosopher who first set this idea out clearly (Ernest, 1998), argued for what he called "quasi-empiricism" in his *Proofs and Refutations*. Here, mathematics is not portrayed as a static Platonic form that is discovered, but as a process, an evolving aspect of culture. The conversation between teacher and students as

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they discuss the Euler characteristic, at first seems to be a Socratic dialogue where the teacher is apprenticing students into traditional conventions of proper mathematical arguments. However, the alternative narrative provided by the footnotes in Lakatos' (1976) book undermines this interpretation, showing how "acceptable" mathematical strategies have varied during different eras of history, and pointing to an analogy between political ideologies and scientific theories (p. 49). Returning to the main storyline of the book, it becomes clear from the characters' arguments that the process of refining a mathematical proof is never-ending. There is always something else to consider. Through his characters' working, and reworking, of Euler's axioms, Lakatos illustrates how the field of mathematics evolves.

It may feel odd to consider mathematics as having authors. As Povey & Burton (1999) write,

> Human meaning-making has been expunged from the accounts of mathematics that appear in standard texts; the contents are then portrayed in classrooms as authorless, as independent of time and place and as that which learners can only come to know by reference to external authority…. because the author(s) of the narrative remain hidden, mathematics becomes a cultural form suffused with mystery and power, a discourse that mystifies the basis for cultural domination." (p. 235)

The word *author* comes from the Latin *auctor/auctoris*, meaning "one who increases, creates, fathers, founds or writes," from *augere/auctum* meaning "to increase," and it can be defined as "one who has created a document" or "the creator of something" (McArthur, 1992a, p. 98). The idea of author as creator has troubled some—can any author truly be considered the sole originator of a text? In his essay "The Death of the Author," Barthes (1968) argues no, noting that in early cultures narratives were delivered by shaman-like figures who acted more as conduit than creator, and that it was only the rise of positivism and capitalism that attached importance to the idea of an author being owner of a particular narrative. Ultimately, Barthes (1968) argues, there is no Author. The person physically performing the act of the writing is just a delivery mechanism for the language system that surrounds him: once the idea of Author is dead,

> the writer no longer contains within himself passions, humors, sentiments, impressions, but that enormous dictionary, from which he derives a writing which can know no end or halt; life can only imitate the book, and the book itself is only a tissue of signs, a lost, infinitely remote imitation. (Barthes, 1968, p. 5)

Others are uncomfortable with the author being seen as a means for "increasing" ideas. Foucault (1984) suggests that declaring someone as an "author" is actually a way to delineate a particular set of ideas (such as identifying a piece of writing as belonging to the works of Shakespeare) so that they can be more easily managed. For example, we may try to restrict the circulation of certain ideas by identifying who their "author" is and then punishing that person. For Foucault (1984), the concept of authorship works as a "system of constraint" (p. 119).

As mentioned earlier, the idea of an author, or lack of one, can be associated with authority and power, particularly in mathematics. Povey & Burton (1999) reframe the idea of authorship by decentering the word *authority*, which they describe as the traditional view of mathematical knowledge as external, fixed, and absolute, to play with the concept of *author/ity* in the mathematics classroom. In splitting up the word, they first foreground the presence of an

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author lurking behind the scenes who negotiates this knowledge and then they open this authorship up to those in the classroom. Povey & Burton (1999) write,

> Teachers and learners… work implicitly (and, perhaps, explicitly) with an understanding that they are members of a knowledge-making community.... As such, meaning is understood as negotiated. External sources are consulted and respected, but they are also evaluated critically by the knowledge makers, those making meaning of mathematics in the classroom with whom *author/ity* rests. (p. 234)

In their shifting of the word authority to author/ity, Povey & Burton (1999) unmask the authoritative, and seemingly authorless, mathematics text as the recorded interpretations of people over time. Brown (1996) suggests that when the focus of mathematics educators turns more to mathematics activities rather than to the mathematics itself, interpretation plays far greater a role—for instance, the students' understanding of a mathematical situation, and how their interpretation changes as they notice new aspects of the situation and make new connections between them. This emphasis on interpretation, Brown argues, is similar to Gadamerian hermeneutics in that the meaning of the mathematics arises from the activity and the language used to frame it. And, in that sense, it opens up the possibility of authorship to any of us who choose to engage in mathematics and communicate our interpretations to others. Mathematician Jonathan Borwein (2006) writes, "We respect *authority*, but value *authorship* deeply however much the two values are in conflict. For example, the more I recast someone else's ideas in my own words, the more I enhance my authorship while undermining the original authority of the notions" (p. 3).

Povey & Burton (1999) define authoring as "the means through which a learner acquires facility in using community validated mathematical knowledge and skills" (p. 232). I would like to push this definition further by suggesting that authoring is also an improvisational process. Improvisation is described by Bateson (2001) as an "act of creation that engages us all – the composition of our lives. Each of us has worked by improvisation, discovering the shape of our creation along the way, rather than pursuing a vision already defined" (p. 1). In mathematics education, problem posing has been defined as "the creation of questions in a mathematical context and… the reformulation, for solution, of ill structured existing problems" (Pirie, 2002, p. 929). As students work on a mathematics task, they pose problems as they go, both as a way of orienting themselves to the task and as a way of developing a solution pathway. To highlight the way in which these problems form the basis of a mathematical storyline, I will work with a simplified conception of story and storyline: although not all stories contain conflicts that are resolved (or are resolvable), and some stories may contain no conflict at all, for the purposes of this essay, I will be defining story in terms of conflicts, or problems.

In considering story as a public vehicle of mathematical expression, I will also be framing my ideas in terms of the group discourse that may take place during the work on a mathematical task—if the role of author can be opened up to all individuals, it can be opened up to groups as well. For instance, "Nicolas Bourbaki," who authored a number of mathematics texts, was actually the pseudonym used by a group of mathematicians in the early twentieth century (Mashaal, 2006). Extending the concept of collective authorship further, beyond the passing around of a manuscript between mathematicians who are employed at different institutions, or a scribe recording the ideas discussed by a group, I follow Bakhtin (1981) who suggests "The word in language is half someone else's. It becomes one's 'own' only when the

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speaker populates it with his own intentions" (pp. 293–294). The discourse a collective produces cannot be parsed into individual contributions of its members, and therefore in this situation the idea of coauthors as plural, although not technically incorrect, is inadequate to describe the kind of authoring that might take place amongst small groups working collectively in a mathematics classroom.

Mathematics and Storyline

Story is a broad term in that it is not tied to a specific format, level of truth, or purpose: As McArthur (1992b) writes:

> A narrative, spoken or written, in prose or in verse, true or fictitious, related so as to inform, entertain, or instruct the listener or reader. A story has a structure that may be more or less formal, unfolds as a sequence of events and descriptions (even when devices like flashbacks alter the flow of time), and concerns one or more characters in one or more settings. (p. 987)

That it can be spoken aloud and that it is the result of a series of events make the story suitable for describing what a group creates in the course of its conversational work together. To tie this in more with mathematical discussion, it helps to reduce the story to a more basic form—its *storyline*. A storyline may be defined as:

> The sequence or flow of events in a story: the unelaborated routine of the *plot*, as opposed to the *theme* that the plot treats. A common story line is *Boy meets girl – boy loses girl – boy finds girl*, and a twist in such a story line might be *girl meets boy – girl loses boy – girl finds another boy*. (Nash, 1992, p. 987)

More simply put, a storyline may be regarded as the linear sequence of "what happens next."

To consider what it is that "happens next," it may be helpful to note what German critic Gustave Freytag (1900) proposes in his work *Technique of the Drama*. Freytag (1990) pictures the structure of a five-act play as a kind of pyramid, which includes the following parts: introduction, complication, climax, resolution, and catastrophe. The "complication," or what has come to be called "rising action," is of particular interest here as it is something that is spurred on by a series of events, or conflicts, with each one triggering the next, in much the same way that a storyline works.

What may drive a story, then, is a sense that there is something that needs to be resolved. It may be a disagreement, a disconnect, an uncomfortable gap in understanding, or a conflict, but it is this something that provides an impetus to further action. William Shakespeare's (1597/1985) play, *Romeo and Juliet*, provides a good example of how the central conflict of a storyline can generate a number of other conflicts, which help to drive the story to its conclusion. A boy (Romeo Montague) and a girl (Juliet Capulet) meet at a feast hosted by the Capulets and fall in love; each belongs to opposite sides of a long-time feud between the Montagues and the Capulets and thus their friends and families will not approve of the match. How can they be together? They secretly marry and decide to wait for an opportune time to reveal the news to the world. However, this soon precipitates other conflicts, including the following:

- Mercutio versus Tybalt regarding Romeo's disguised and unauthorized presence at the Capulet feast;

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- Romeo versus Tybalt regarding Tybalt's slaying of Mercutio;
- Romeo versus the kingdom in terms of a suitable punishment for his slaying of Tybalt;
- Juliet versus Lord Capulet regarding his wish to marry Juliet to Count Paris;
- Romeo's misinterpretation of a message about Juliet's "death;"
- Romeo versus Paris when they unexpectedly meet up at the Capulet family vault where the unconscious, but seemingly dead, Juliet lies;
- Romeo's decision to drink a poison in order to join Juliet in death; and
- Juliet's decision to use Romeo's dagger to stab herself when she finally awakens to discover the scene around her.

It is one thing to author a literary story, generating a storyline based on conflicts, but is it another to author the solution to a mathematics task? Just how original can you be in solving, for example, "the Locker Problem," a task that thousands and thousands of students have been assigned over the years and one that has a single, correct answer?[1] Again, returning to Romeo and Juliet, we have an example of a "classic" storyline that recurs in Western literature. Shakespeare's central problem of the star-cross'd lovers in *Romeo and Juliet* is echoed in our contemporary *West Side Story* and even in the more recent *High School Musical*, and Shakespeare's play itself is a descendant of Arthur Brookes' 1562 poem *The Tragicall Historye of Romeus and Juliet,* which is itself a translated interpretation of one of Matteo Bandello's short stories found in *Novelle* from 1554 (Drabble, 1985). Yet each author has made the story his/her own by varying the storyline. While the overarching conflict is the same (young couple from opposite sides of warring worlds comes to a tragic end), it is how the smaller conflicts, or problems, are settled that makes each text unique. We can think about the storylines that result from mathematics tasks in a similar way, and in the next section, I discuss a study I conducted about collective problem posing in order to do so.

Authoring Mathematics in the Classroom

In the study, small groups of students from a middle school located in the suburban Lower Mainland of British Columbia worked on "problem of the day" tasks assigned by their classroom teacher. The task considered here is as follows:

The Bill Nye Fan Club Party

> The Bill Nye Fan Club is having a year-end party, which features wearing lab coats and safety glasses, watching videos and singing loudly, and making things explode. As well, members of the club bring presents to give to the other members of the club. Every club member brings the same number of gifts to the party.
>
> If the presents are opened in 5-minute intervals, starting at 1:00 pm, the last gift will be opened starting at 5:35 pm. How many club members are there? (Armstrong, 2017)

The four groups (REGL, JJKK, DATM and NIJM) working on this particular task were audio and video-recorded and these recordings were transcribed. I then analysed the transcripts considering problems posed by each group as it worked on solving this task, 31 in total (see Figure 1). I assigned different colours to these problems, colour-coded the transcripts, and then shrank these transcripts so that the words were no longer visible and the coloured patterns formed a visual representation, a "tapestry," of each group's conversation (Figure 2).[2] These

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tapestries help to illustrate some of the storyline traits of the mathematical word the groups do. As I consider authorship in this study to be occurring at the level of the group, I will always refer to each group as a whole rather than to the individual people who comprise it.

Colour	Problem posed (generalized)	JJKK	DATM	NIJM	REGL	#
Lavender	Do we use time and divide by 5 [number of intervals]?	X	X	X	X	4
Medium blue	What about if everyone brings x gifts each?	X	X	X	X	4
Purple	Is there an extra 5 minutes? (because last gift is opened starting at 5:35)	X	X	X	X	4
Deep red	How many people are there?	X	X	X	X	4
Slate blue	What are the factors of x?	X		X	X	3
Lime green	What is meant by an interval?	X		X	X	3
Olive green	Do all members give to everyone?		X	X	X	3
Goldenrod	Do they also bring gifts for themselves?		X	X	X	3
Orange	Does everyone bring the same amount of gifts?	[X]	X	X	X	3
Sky blue	How many gifts are there?			X	X	2
Brown	What if there are x people?			X	X	2
Green	How do we think outside the box?			X	X	2
Teal	Is it a square root?	X		X		2
Fuschia	Why did we get x?	X	X			2
Dark pink	How long does it take to open all the gifts?	X	X			2
Light purple	Can they take breaks in between opening gifts?	X	X			2
Pale yellow	Does it start at one o'clock?		X	X		2
Gray	What is a tournament?				X	1
Red	What if it's an exchange?				X	1
Light green	How long does it take to open one gift?				X	1
Forest green	Can't we just count how many people?				X	1
Lilac	How many gifts does each person bring?	X				1
Coral	How many gifts are opened in an hour?	X				1
Gold	Is another group's answer right?			X		1
Sage	Can they bring partial gifts?			X		1
Pink	What if someone doesn't get a gift?			X		1
Dark blue	How do we know if we're right?		X			1
Blue	What if there are x people and gifts?		X			1
Peach	Does it take 5 minutes to open one gift or 5 minutes to open all the gifts that one person brings?		X			1
Light blue	How can we use the 24 hour clock?		X			1
Yellow	Can they open gifts at the same time?		X			1

Figure 1. The Colour Coding Chart organized by numbers (Armstrong, 2017)

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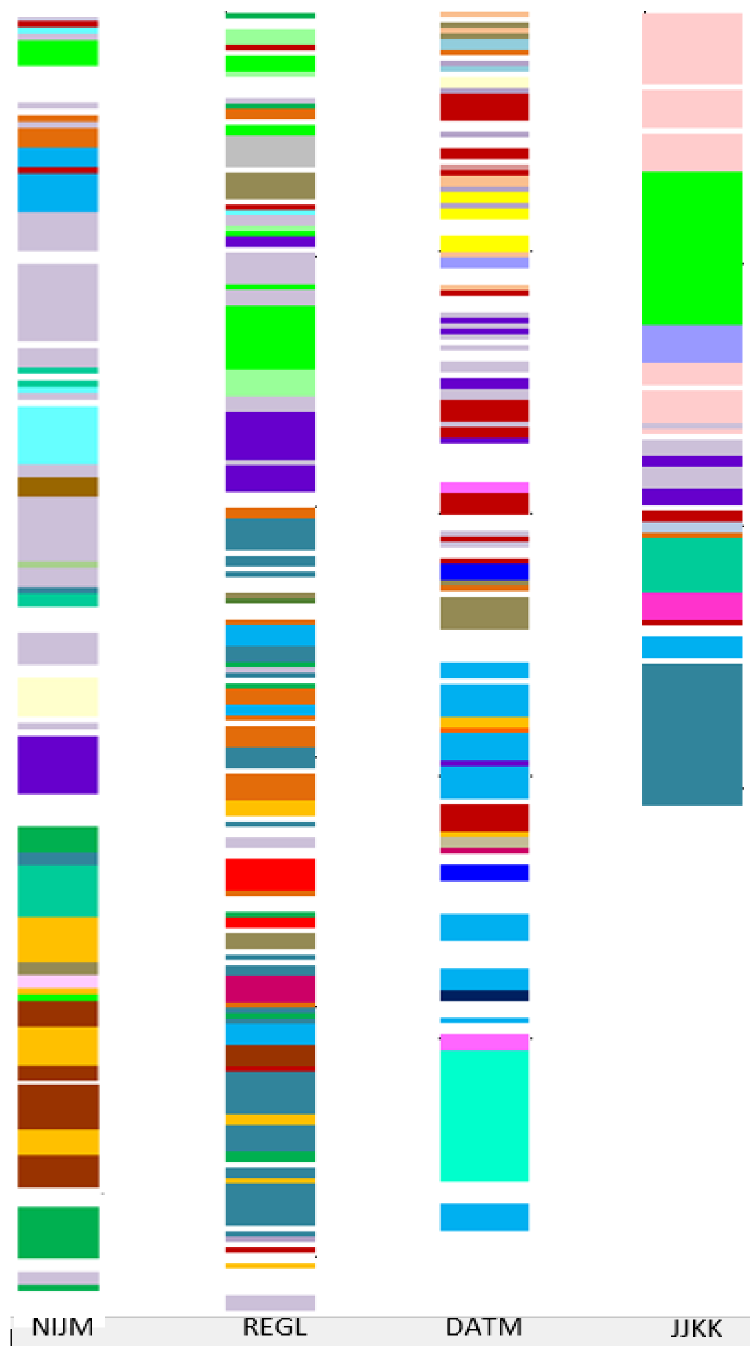

Figure 2. Tapestries (Armstrong, 2017)

The tapestries reveal how the mathematical stories each group authored have structures in common with a literary story. At the beginning and near the end of the tapestries, there are areas where the pattern is "thready" (a series of thin strands of colour) indicating that a variety of problems are being posed in a brief period of time. During the introduction of a literary story, an author may mention details in order to set the scene for the storyline, details that may be taken up as the plot proceeds. When beginning a mathematical task, a group may tentatively pose a number of problems for discussion, putting them "on the table," so to speak, as a way for the group not only to establish the parameters of the task, but also to negotiate a way to begin it. At

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the end of a literary story, once the climax has been reached and the central problem resolved, there are often loose ends (smaller problems) that the author may wish to revisit in order to wrap up the storyline. For a mathematical task, once the group has arrived at a solution, it may choose to "check" the answer by trying to solve the task in an alternate way, or by reviewing the problems they had posed during their discussion, and thus some problems may briefly be reposed for further consideration.

Another way the tapestries reflect a literary story is the presence of the shared elements between them. What makes the storyline of *Romeo and Juliet* "Romeo and Juliet," regardless of who the author is, is the presence of certain features of the story: the characters (the lovers), their situation (their feuding families, and thus the social pressure that works against their relationship) and a series of events that serves to keep them apart. This may also be said of a rich mathematics task—there are certain mathematical elements that need to be addressed. The Bill Nye task is a fairly structured one in terms of which mathematical concepts are used to solve it. Students need to determine the total amount of time it takes for the gifts to be opened (as the last gift starts being opened at 5:35 pm, the total amount of time is 280 minutes), how many five minute intervals there are (280/5 = 56 intervals), and which factor pair of 56 would enable each club member attending the party to bring one gift for every other club member (i.e. no one brings a gift for themselves). In the end, eight club members each bring seven gifts (56 = 8 x 7) to the party. With the Bill Nye task, problems posed include the following: "Is there an extra 5 minutes?" (purple), which is used to determine the total amount of time; "Do we use time and divide by 5?" (lavender), which is used to determine the number of intervals; and "What are the factors of x?" (slate blue), which is used to determine which factor pair to use. Although the order of these posed problems is not precise—as we can see in the tapestries, groups do go back and forth between these particular posed problems and deal with them at different times—ultimately, for example, the number of intervals needs to be established before the correct factor pair can be determined. Thus, lavender tends to be more prevalent in the top half of the groups' tapestries, and slate blue tends to be more prevalent in the bottom of the tapestries of the three groups who posed that particular problem.

What is probably most striking about the tapestries is how different the colour patterns are between them, despite each group being engaged in the same task and arriving at the same final answer. The problems were posed in different orders, were discussed to varying degrees (resulting in colour bands of various thicknesses), with some problems re-emerging again in the course of the conversation, while others did not. As a result, each group's solution pathway has its own style, just as authors of the various versions of *Romeo and Juliet* have their own styles of telling the story. For instance, JJKK tended to discuss each problem it posed at length, one at a time, and the "chunky" pattern of its tapestry reflected this. Very early in its session, NIJM identified "Do we use time and divide by 5?" as the main problem to pursue, posing other problems to refine its understanding but returning to "Do we use time and divide by 5?" again and again. REGL realized about halfway through their session that it was not coming up with a reasonable answer, and started working on the task over again, quickly reviewing through what it had been doing and reposing many problems over again in the process. This resulted in a thready section midway through REGL's tapestry. Finally, DATM sometimes argued about which problem to pursue next, resulting in patches of tapestry where two bands of colours alternate.

Although, there were four problems posed by all four groups, almost half the total number of problems (14 of 31) were specific to certain groups. A high proportion of the

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problems posed were unique points to the potential "creativity" of mathematical storylines in terms of the richness of the different mathematical ideas that the groups explored while engaged in the task. JJKK and DATM each discussed alternate ways to determine the number of five minute intervals in the period of time given, with JJKK considering how to work with the number of five minute intervals in one hour, and DATM pondering the use of the 24 hour clock (an idea they had apparently picked up from a previous task in the study). In its session, REGL searched for a metaphor to capture the mathematical concept of combinations that was the basis of this task (7 gifts each by 8 club members). NIJM considered the difference between the square root of a perfect square (a natural number) and the square root of any other number (a rational number) in the process of narrowing down what possible factors might be. Some of these discussions were digressions—REGL's metaphor was not strictly necessary for solving the task, nor was DATM's 24-hour clock, but they were mathematically interesting ones. In a literary story, digressions have value—they might help to develop a character, a setting, a theme, the voice of the narrator, etc. In traditional mathematics classes, there is little room for digression. In considering the question, "if learners don't reach the right answer, have they still done the math?" the quick response is typically, "Oh, I give them part marks as long as they've shown their work." However, what this usually means is that students are awarded marks for following at least some of the expected procedures, not for exploring related mathematical topics. If the digression strays too far from the expected mathematics of the assigned task, it likely is not valued at all, even if it is mathematically sound and interesting. In the traditional mathematics classroom, there little no time to wander and think.

Implications of Students Authoring Mathematics

The groups described above all deal with the Bill Nye task in a way that was creative and personal, having the time and the motivation to explore the meaning of the mathematics they were exploring and to author unique storylines in doing so. There are implications in connecting mathematics with storytelling. Stories serve different purposes—to entertain, to educate, to unsettle, to comfort, and so on—and many are not purposes normally associated with mathematics. Framing doing mathematics as storytelling would help to privilege the process of doing mathematics over the product that results from it (the answer), something that might make school mathematics more satisfying, more human, for our students. Despite the recent reform efforts in mathematics education in the past few decades, I still have far too many preservice teachers coming into my elementary program mathematics methods courses having had bad experiences with mathematics and having been left alienated from, and very anxious about, the subject. As students, what they learned was to regurgitate required procedures, not to understand what it was they were doing and why. Mathematics was not their story to tell. Thomas King (2003) writes, "The truth about stories is that's all we are" (p. 2). What are the stories in school mathematics, then, and when will we allow our students the author/ity to tell them?

---

[1] In the Locker Problem, there is a wall along a hallway that contains a bank of lockers. This number of lockers can vary, but let's say there are 100. A student comes along, and as she walks down the hallway, she opens every locker door. A second student comes along, and as he walks, he closes every second locker door. A third student walks down the hallway and changes the position of every third locker door: that is, if the door is open she closes it, and if it is closed she opens it. A fourth student comes along and changes the position of every fourth locker door, and so it goes. After the 100th student walks by, which locker doors are open?

[2] For further detail about this process, please see Armstrong, 2017.

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Audit Culture and a Different Kind of Publishing Crisis in the Academy

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Author's Note

This article was also published by the LSE Impact Blog, of the London School of Economics under the title, *The growing, high-stakes audit culture within the academy has brought about a different kind of publishing crisis* (November 5, 2018).

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Audit Culture and a Different Publishing Crisis in the Academy

By now most readers will have heard the news about the so called "Grievance Studies" affair, where a team of three writers, with the explicit goal to deceive, succeeded in getting four of 20 fraudulent research papers published and another three accepted in humanities journals. They did so, as reported in the *New York Times* (Schuessler, 2018), by starting with conclusions, they would work "backward to support by aping the relevant fields' methods and arguments, and sometimes inventing data." The *New York Times* article quotes psychologist Steven Pinker (2018) who tweeted "Is there any idea so outlandish that it won't be published in a Critical/PoMo/Identity/'Theory' journal?"

The truth is, psychology and other scientific disciplines have their own publishing crisis to worry about. High-profile cases such as the fresh resignation of Cornell food scientist Brian Wansinkor (Rosenberg, & Wong, 2018) or the dubious p-hacking power pose research (Dominus, 2017) of the no-longer-tenure-stream Harvard Business School psychologist Amy Cuddy, reveal a widening replicability, or outright deception, crisis in the social sciences.

Sure, the "gotcha" moments, such as those reported by these hoaxers or the individual accounts of the rise and fall of fraudulent star academics, are perhaps thrilling to read about in a *schadenfreude* kind of way. However, the greater harm of these incidents is the further erosion of our collective trust in scientific research. They provide even more fuel to a growing and dangerous anti-intellectualism and eventually could lead to the complete mistrust of science itself.

But these distract from the bigger and, frankly, more important story happening on today's campuses, which is the growing, high-stakes audit culture within the academy that results in extreme pressures to publish and, for some, the resort to cooked-up findings and the deliberate faking of science.

The circumstances by which university professors find themselves under extreme pressure to publish and meet specific research and funding targets is what truly merits our closer attention. Necessitating our interrogation is how the publish-or-perish culture has become so alarmingly demanding that it consumes most of a scholar's time and output and drives some to dangerously high stress levels, the temptation to falsify findings, and, in some extreme cases such as that of Dr Grimm (Cassidy, 2014), to even take one's own life.

Part of the answer, it seems, lies in the manner in which academia has been perverted by audit culture all over the globe. Corporate shifts in how universities are governed have spawned a whole class of middle-management auditors (accountants, in function) who have replaced faculty administrative positions, while retaining little of those administrators' collegial academic traditions other than perhaps their holdover titles, such as associate dean, associate vice president, dean, and so on. The ballooning of the management class in the academy is directly related to its widespread shift to new public management techniques which include (a) adopting private-sector management practices; (b) introducing market-style incentives and disincentives; (c) introducing a customer orientation coupled with consumer choice and branding; (d) devolving budget functions while maintaining tight control through auditing and oversight; (e) outsourcing labour with casual, temporary staff; and (f) emphasizing greater output performance measures and controls in the name of efficiency and accountability.

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With these fundamental changes we are witnessing the full-scale implementation of audit culture. In fact, audit culture has now crept from being a method of financial verification to a general model or technology of governance that is reshaping almost every aspect of higher education. The sociologist Michael Burawoy (2011) has examined how an overly benchmarked reliance on key performance indicators distorts university practices and likens their effect to old-school Soviet planning, where tractors were too heavy because their outputs were measured by weight, and glass was too thick because targets were in volume.

The tabulation of our worth as scholars through narrowly conceived, quantifiable metrics that consider, for the most part, only simplistic counts of peer-reviewed publications, impact factor rankings, and research grants—in a dystopian cut-throat higher education version of *The Hunger Games*—has necessarily given rise to a host of distortions, not least of which is a proportionate growth in “cooked” science and findings. In other cases, yes, it has also contributed to less-than-perfect peer review by overtaxed academics overrun by salami-sliced research reporting where one complete article gets chopped up into three or four publishable units that clog up the entire manuscript review process.

If the academy is ever to escape these negative consequences brought on by a misapplied audit culture, it will only be when we denounce the "game" and cease to allow ourselves to be measured by such narrowly defined outputs in a one-size-fits-all factory model of knowledge creation, dissemination, and accounting.

Whatever the easy stereotype of the life of a scholar, either sequestered away in an ivory tower or perhaps, in reality, more appropriately replaced with the image of hamsters endlessly turning wheels in the audit culture’s office blocks, in envisioning the nature of our future home, surely we should seek to repopulate the academy’s lighthouse, and once again provide the diverse array of consequential scholarship, innovation, action, and critical public engagement our world so desperately needs.

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Collaboration: Finding our Way Within, Around, and Through

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In the fall of 2017, I began my doctoral studies, three decades after starting my teaching career. As I re-engaged with the academic world, reading, listening, talking, and writing, I reflected on the experiences that provided me with the energy for this stage of the journey and realized there was a story I needed to tell, one that embodied the power of professional collaboration, trust and curiosity.

Why Collaborate?

Collaboration is regarded as an essential component of professional learning and educational reform internationally, nationally, and provincially (Fullan, 2007; Hargreaves & Fullan, 2012; Hargreaves & Shirley, 2009). Internationally, countries look to one another's education systems, seeking solutions and insights, navigating between a desire to climb the scale on traditional international assessment measures while wrestling with the complex changes in the ways humans interact, create, and participate in society. As Zhao (2017) writes:

> Human society is entering a new age marked by swift technological change, as well as rising challenges such as environmental degradation, the displacement of human workers by machines and widening inequality. We need to invent a new education paradigm that can cultivate uniquely creative and collaborative individuals to meet these challenges and take advantage of the new opportunities.

We, also, need to support and empower uniquely creative and collaborative teachers who can model, inquire, create, and share these skills in systems that can respond to both challenges and opportunities. The works of Lieberman (2005) and Seashore Louis and Kruse (1995), among other scholars, describe the need for teachers and school leaders to be able to adapt to changing conditions in order to educate young people in this rapidly changing digital world.

The need for collaboration is not only being considered in international contexts; the Council of Ministers of Education, Canada (CEMC, 2017) also emphasizes the imperative of working collaboratively in an interdependent world in the following:

> A clear and relevant definition of global competencies for students in the pan-Canadian context is absolutely essential to support future discussions on fostering and measuring these competencies across provincial and territorial education systems. To that end, ministers have endorsed the following six pan-Canadian global competencies:
>
> - critical thinking and problem solving
> - innovation, creativity, and entrepreneurship
> - learning to learn/self-awareness and self-direction
> - *collaboration* [emphasis added]
> - communication
> - global citizenship and sustainability.

In British Columbia discourse, collaboration is also emphasized. Over a decade ago, the Office of the Auditor General of British Columbia (2003) noted:

The importance of collaboration in education has been well documented in education reform literature. Developing capacities to support collaboration within and across communities provides opportunities to gain the shared knowledge and understanding necessary to develop and build upon a collective vision of realizing sustained education improvement. Communities that recognize the importance of collaboration understand that collective knowledge can generate new ideas, create group cohesion around a shared purpose, and foster a learning organization. (p. 8)

Despite these endorsements, deep and meaningful collaboration is not well understood, supported, or nurtured in schools and other educational settings, and is sometimes dismissed or disparaged, either implicitly or explicitly. Top down leadership models, pressure from disaffected colleagues, and structures designed for industrial efficiency (such as rigid schedules, bells, and classroom space characterized by desks in rows) can sap energy from the efforts of those committed to working together. Tensions between the development of collaborative communities for professional growth and learning within the context of structures and hierarchies designed for individualism are a complex reality to be negotiated. Educators need to find and create supports for collective endeavours. We need to find our ways to collaborate with our peers, model it in our classrooms, and teach it to students within, around, and through sometimes inhospitable environments.

As I considered this tension from my current vantage point as a doctoral student interested in professional learning and collaboration, I found myself returning to those early years of teaching, when I had the opportunity to experience professional growth through a collaborative endeavour. I connected with my two colleagues, Wendy and Brenda, who were so much a part of this story, and asked their permission to write about our time working and learning together. They came back with a resounding “Yes!” It was through the writing of this essay that I came to understand the profound experiences we had 30 years ago. The story of that time is woven in italics throughout this paper.

In 1986, parents, teachers, and district staff developed a shared vision for a model that was intended to support collaboration between colleagues and students, and integration of courses and disciplines. It was designed to support student voice and choice in learning, realizing the belief that students learn in different ways, and at different rates. Students in this program (which would exist within a conventional comprehensive high school) would be with each other and their teachers for multiple blocks, allowing for teaching and learning to be unencumbered by the traditional block and bell schedule. Rather than distinct “blocks” of time for each subject, a model ubiquitous in high schools, students and teachers would work together for the equivalent of half their timetable, exploring English, Social Studies, Math, and Science in interdisciplinary, organic, and shared ways. In addition, actively attending to lifelong learning skills including creative thinking, critical thinking, and problem solving, collaboration, and communication, were intended to serve as through lines, weaving throughout the subjects.

Looking back on this time through the intervening decades has helped me realize how innovative these ideas were, and how hard won those victories of valuing flexibility over scheduling must have been. It was the collaborative work of parents advocating for choice, teachers inspired by new ways of doing things, and district staff willing to

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support the vision by allocating the necessary space and resources that allowed the program to materialize.

The program started the same year I began teaching at the school, and, although I was not involved in its first year of implementation, I was hopeful for its success and watched with interest, as those involved worked together to navigate inhabiting a space of emergence within a traditional high school setting.

An important aspect to this vision was to conceive of learning through organic, rather than mechanistic metaphors (Davis, Sumara, & Luce-Kapler, 2008). More than the sum of its parts or a series of steps that result in understanding, learning is inextricably interwoven with other systems in a continual and adaptive "dance of change" (Davis, Sumara, & Luce-Kapler, 2008, p. 77). My notion of *within, around, and through* emerges from the natural world, recognizing the organic nature of learning, a complex and constant negotiation of certainty and uncertainty, and of knowing, unknowing, and coming to know. In the living world, a stream or a root will negotiate an impediment, and a seed will come to flower in a seemingly inhospitable environment. If learning is seen as adaptive and organic, education reform is possible when we focus on the stories of those who find their ways within, around, and through to imagine a way forward. Margaret Wheatley (2017) describes it this way:

> What distinguishes living systems from machines is their ability to learn…A healthy living system is a good learner and can thrive even though its environment is moving toward increasing disorder. But to do so it must be actively engaged and aware. (p. 29)

Collaboration allows for an evolving understanding of the needs of engaging in a collective enterprise. Meaningful change requires meaningful collaboration, and meaningful collaboration requires trust and curiosity.

The Role of Trust

Trust is a precondition for collaboration (Lewis, 2006). Cloke and Goldsmith (2002) report that the more school leaders emphasize the bureaucratic elements of organization (policies, rules, regulations, and authority), the more satisfaction, creativity, commitment, and motivation are sabotaged. Embedded in this notion are implicit assumptions about distrust and trust, what Tschannen-Moran (2009) describes as bureaucratic orientation (implicit distrust of teachers through a command and control leadership model) versus professional orientation (implicit trust that teachers will utilize their knowledge, skills and dispositions autonomously to work to improve student learning). For those working in an organization with a bureaucratic orientation, collaboration occurs in those spaces not occupied by oppressive policies and authority. These collaborative spaces then become up to individual teachers to nurture in less formal ways—to find opportunities within existing structures to do the work of working together.

Bryk and Schneider (2002) identify four components of trust: respect, professional competence, personal regard for others, and personal integrity. Each of these informs the work of meaningful collaboration and must be acknowledged and embedded in the work of school improvement and was evident in my experiences from 30 years ago, described previously in this paper.

One critical element of respect is the belief that individuals "are being deeply listened to and understood" (Kaser & Halbert, 2009, p. 50). A key indicator of respect is how discourse is

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structured within a community (Bryk & Schneider, 2002), and how people connect and talk together, both formally and informally. Collaborative endeavours without respect will be superficial and meaningless. Whatever the means of collaboration, respect allows for open exchanges where people can examine their practice and learn together, and an emotionally safe space to ask questions and to explore complexity and tensions.

Trust requires the ability to listen. Attentive listening shows genuinely that what someone has to say is important and worth hearing. It is through listening that we can attend to others' perspectives, encourage them to give voice to their ideas, and provide the space to hear diverse views.

Bryk and Schneider (2002) describe the act of listening this way: "A genuine sense of listening to what each person has to say marks the basis for meaningful social interaction" (p. 23). Too often conversations, even those around education reform and change, are solution oriented, dealing with solving the most immediate problem, or covering items on an agenda. Fullan (2007) stresses that learning communities must "foster an open exchange where teachers can explore elements of their own practise that they see as ethically responsive or problematic" (p. 50). These are difficult, and sometimes painful, conversations. When people feel heard and acknowledged, they can begin to share their stories. The following is the story of how I came to understand the importance of listening.

> *One of my most meaningful collaborative experiences began in my second year of teaching, but my first year at this particular school. It began, as many relationships do, in a serendipitous exchange. My colleague, Wendy, also in her first year at this school, joined me in the photocopy room. And in that space that occurs as two people are waiting, she asked me how thing were going, and, as we were waiting for the photocopier to finish, I told her. And she listened. Her willingness to be silent and to listen began our professional journey together.*

My own story of collaboration began with a colleague's willingness to listen, to create the respectful space for me to answer a question fully.

Professional competence is the second element of trust and is key to meaningful collaboration. This competence is characterized by a shared sense of purpose, with a collective focus on student learning (Seashore Louis, Kruse, & Marks, 1996). Teachers are required to apply their professional judgement in situations within ethical expectations, codes of conduct and standards of practice. However, in schools with bureaucratic leadership models leaders "do not trust teachers to make responsible, educationally appropriate judgements" (Darling-Hammond, 1988, p. 63). This lack of belief in teachers' professional competence erodes trust and limits collaboration, as Darling-Hammond (1988) describes in the following:

> Norms of inquiry and ethical conduct are extremely important. But because knowledge is constantly expanding, problems of practice are complex, and ethical dilemmas result from conflict between legitimate goals, these requirements cannot be satisfied by codification of knowledge, prescriptions for practice, and unchanging rules of conduct…these norms must be accompanied by socialization to a *professional standard that incorporates continual learning, reflection, and concern with the multiple effects of one's actions on others as fundamental aspects of the professional role.* [emphasis added] (p. 67)

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Darling-Hammond's findings connect professional competence and respect with trust. Teachers, working together in mutually meaningful ways, create opportunities to explore their professional commitment and growth in highly complex situations.

Paradoxically, vulnerability is an important consideration in developing competence. Bryk and Schneider (2002) conclude "the key operational feature of a school community is not its power distribution, but rather a set of mutual dependencies and, with them, mutual vulnerability" (p. 183). Those with the most power in a situation must be willing to show vulnerability first, something unlikely to happen in a highly hierarchical organization with a leader who has an authoritarian orientation.

However, when vulnerability is demonstrated, when those with whom we work acknowledge they are puzzled or challenged, meaningful conversations can occur. Kruse, Louis, and Bryk's (1995) work identifies five elements of successful learning communities: reflective dialogue, deprivatization of practice, collective focus on student learning, collaboration, and shared norms and values. They go on to emphasize the social and human resources required in learning communities, which include openness to improvement, trust and respect, and a strong cognitive and skill base. These resources require professional competence, expressed through knowing, unknowing (a willingness to let go of ideas that no longer serve), and coming to know.

> *As Wendy and I listened and talked, we were able to articulate the challenges of connecting our practice with our ideals, and identify organizational constraints on realizing these ideals. We were exploring our commitment to the profession. Our growing mutual respect allowed us to engage in honest conversation, and our interest in growing our professional commitment fueled our conversations. The questions we explored together and formed the basis for our collaboration included the following: Was what we were teaching worthwhile and meaningful? Were we making a difference? What gets in the way of improving our practice and how do we work our way through those things?*
>
> *Wendy had been hired to teach in the new integrated program, and she invited me in to her classroom to explore whether this flexible learning environment provided more authentic learning opportunities for students than the traditional system in which I was teaching.*
>
> *The following year, I joined her as part of the integrated program team, a Humanities teacher (me), a Math teacher (Wendy) and a Science teacher (Brenda). The three of us took the curricular expectations and determined where we could integrate, blur, or remove disciplinary boundaries, and how we could use the larger blocks of time to students' advantage by organizing learning experiences outside the school, taking the time we needed for a concept to be taught and practised, and for students to rework assignments if they did not receive the results they had hoped for.*
>
> *The pushback from some other staff members was swift. Some advocated for us buying our own texts and resources (we were "hogging"), others felt students in our program were not "playing fair" if they received higher marks after reworking an assignment or projects, still others objected to students working together in the hallways and corridors.*

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Through these interactions, our team would regroup and ask ourselves if what we were doing was in the service of the students' learning and growth. We were constantly in positions of needing to justify our actions and decisions, and as relatively new teachers, we continually questioned ourselves. It was our respect for one another and the students we taught, and our commitment to working in ways we believed would support students in success (both academic and in learning the skills needed for life—problem solving, being responsible for choices and decisions, working together) that kept us going.

We were challenged to make our ways fit the conventional ways—the timing and format of report cards, the criteria for awards, punishments for late assignments, the expectation of department and provincial exams. And still we kept working together, finding our ways within, around and through.

Our emerging understanding of professional competence as a commitment to our professional standards and a willingness to explore what we did not know allowed for what Tschannen-Moran (2009) identifies as openness that "allows collective problem finding and problem solving to characterize the professional dialogue" (p. 229).

The third element of trust is personal regard for others, the belief that others care about us and are willing to "extend themselves beyond the formal requirements of a job definition or a union contract" (Bryk & Schneider, 2003, p. 42). In situations of low trust, micro-managing becomes a way to exert control over others' actions. Cloke and Goldsmith (2002) found that this encourages a culture of dependency, one that interferes with professional growth. Trying to control variables through micro-managing results in alienation and lack of commitment, exactly the reverse of what is needed for trust and collaboration. Furthermore, Tschannen-Moran (2009) describes the control paradox, where the more leaders try to control through rules and policies, the more resistance and resentment builds. In fact, Solomon & Flores (2001) discovered that while teachers may outwardly comply with this control structure, they will find ways to sabotage leaders' efforts, using their creative efforts in ways that undermine rather than support.

A trust orientation builds on the notion that professionals work beyond the job description or contract, and that this is an intrinsically motivated choice. Building the personal regard that emerges from this trust orientation takes time. It takes witnessing and acknowledging behaviours over many occasions to see the situations when individuals go above and beyond with students or colleagues, where people demonstrate this internalized commitment to the professional role.

Because Wendy, Brenda, and I spent so much time together with students, we witnessed each other's commitment to the work we were doing together, which further increased our personal regard for each other. Our conversations and collaborative efforts required that we shared perspectives, information, and ideas, and that we problem solved together. A student concern became an opportunity to examine our practice, to determine our part in creating or ameliorating the situation.

We also came to know the students better. We were with them for half the school day, and saw them in a variety of contexts. They were writing and performing plays, helping one another in math, working in multi-aged groups, working with us in one-to-one and small group situations. And Brenda, Wendy, and I watched and learned from one

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another as we saw how we interacted with students, designed curriculum, planned for activities, and considered assessment practices.

We saw evidence and examples of each other's work inside and outside the classroom. Advocating for the students, working together to create meaningful learning experiences, figuring out how to work within, around and through existing paradigms, brought out in each of us an increased regard for the others.

Students also shared with us their frustrations and successes, how Flex was challenging, what structures were working, and what got in the way. They became advocates, talking to other students, teachers, and school district officials about why the program worked for them and how this community was making a difference.

An unintended benefit was that students learned how teachers talked about pedagogy and purpose. They were witness to, and participants in, discussions about how and why we organized, what mattered to us fundamentally and how we enacted (or didn't) the philosophies of the program.

This personal regard for one another, coupled with our commitment to developing our competence and our mutual respect, strengthened our commitment to our partnership and our program.

Integrity, the final element of trust (Bryk & Schneider, 2002), is the product of consistency between our words and actions. It also connects with the competence element of trust in that, when inevitable frustrations or disagreements arise, our actions and decisions must maintain integrity with the underlying principle of supporting students. Darling-Hammond (1997) elaborate on this point, writing, "When all is said and done, what matters most for students' learning are the commitments and capacities of their teachers" (p. 293). Integrity is the desire and commitment to act in ways that puts the learning of students at the centre.

The quality of support systems allows individuals to cultivate and demonstrate integrity. If school leaders are not seen as having integrity, there is a resulting lack of trust in these leaders and an even further result of stifling communication. Tschannen-Moran (2009) writes:

> In addition, differential levels of trust can affect patterns of communication between levels of a hierarchy. When one is interacting with a distrusted person within an organizational hierarchy—especially if that person holds more power—the goal of communication becomes the protection of one's interests and the reduction of one's anxiety rather than the accurate transmission of ideas…Specifically teachers have described being guarded in what they said—that they often blocked or distorted communication to avoid confrontation with colleagues and administrators. (p. 222)

Distrust is not a condition in which collaboration can flourish. The energy of individuals is directed at protecting themselves from situations of distrust by focusing on self-interest, rather than energy being directed outward to explore, share, and improve alongside colleagues and school leaders.

Tschannen-Moran (2009) describes school leaders as those who demonstrate integrity and "a professional orientation, not only structure work processes but cultivate norms that enable teachers to productively engage in collective inquiry and constructively contribute to student

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needs" (p.11). When conflicts arise, and they will, integrity focuses the energy on shared understandings rather than personal victory:

> In adjudicating these disputes, integrity demands resolutions that reaffirm the primary principles of the institution. In the context of schooling, when all is said and done, actions must be understood about advancing the best interests of children. Teachers demonstrate such integrity to their colleagues when they willingly experiment with new forms of instruction to promote student learning, even though this entails additional work and the risk of failure can be high. (Bryk & Schneider, 2002, p. 26)

> *There were inevitable conflicts. Frustration and fatigue did not call the best out in us. It sometimes felt as though we were battling on all fronts, justifying our practice at the same time as we questioned it, putting in extra hours to find time and space where we could plan together while watching others leave for home. What pulled us back together was that one of the three of us would ask two questions: "Are we doing what we feel is in the best interests of the learners?" and "What can we take on now, and what can wait?"*

> *The ability to telescope from the big picture to the details and out again was a powerful outcome of our collaboration. The camaraderie we had, along with the trust we had developed, allowed this rich conversation between the ideal and practical, focusing our energies on keeping true to the philosophy of the program. Debriefing the joys and struggles fueled our conversations. We were engaged, although we would not have named it as such at the time, in reflexive practice.*

> *We decided to ask for feedback from parents and students in the program and held a series of formal and informal sessions to discover whether our philosophy of the program was enacted in what we were doing, and if parents and students had the same conceptions of the purpose of the program.*

> *The three of us made a conscious decision to resist defending or becoming defensive if ideas and opinions were different from our own. We framed the discussion around exploring and recommitting to the fundamental principles of the program, and determining if our practices aligned with these principles. What we discovered was that parents and students felt we were not challenging the current educational models enough. What we thought might be pushback from our ideas actually turned out to be a renewed energy for further exploring what the program could do and be. Parents and students were not behind us; they were waiting for us to catch up.*

The Role of Curiosity

To develop trust, those who work together must demonstrate the characteristics of respect, professional competence, personal regard for others, and integrity. However, trust alone does not create learning communities. These attributes take time to become known in a fast-paced, complex, and sometimes isolating profession.

In many schools, the desire for professional autonomy has contributed to this isolation. This view of professionalism, one that equates autonomy with independence, fails to recognize the interdependence between "bodies and minds, selves and others, individuals and collectives, knowers and knowledge" (Davis, Sumara, & Luce-Kapler, 2008, p. 98). Fullan (2007) also emphasizes the need to breakdown autonomy:

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> Teachers and teacher leaders will have to take some risks here. It is one area that is both powerful and within the control of teachers: break down the autonomy of the classroom so that greater consistency of effective practice can be achieved. (p. 56)

Although students surround teachers almost all day, the act of teaching can feel quite lonely. It is not that teachers necessarily want this isolation. Many express a real desire to interact with colleagues at times other than formal meetings or during lunch hour. They express envy when teacher candidates are encouraged to observe widely, in different learning spaces in the school, and outside of their disciplinary areas, since for most teachers, what goes on in other teachers' classrooms is a mystery. A former colleague described it this way: "Sometimes being a teacher feels like being an egg in a carton; we are each in our own container in a manner that seems well-organized, but is actually isolating for teachers and endlessly replicating for students" (D. Norris-Jones, personal communication, September 22, 2015). School leaders have the capacity to support their teachers' desire to work collegially by considering organizational changes, such as the arrangement of time to allow for collaborative planning. However, structural change alone will not necessarily increase collaboration. Curiosity about improving our practice through collaboration can draw us outside our classrooms to learn in community.

Just as I deliberately chose to use the term collaboration as opposed to professional learning communities, I am deliberately using the term curiosity instead of the currently popular term *inquiry*. Inquiry runs the risk of becoming another trend, the downside of which is the adoption of the term without a deep understanding of, or commitment to, the process. Curiosity is a habit of mind more than a series of steps or a plan to implement. Kaser and Halbert (2008) describe this process as a mind-set that "helps build capacity in school for lasting improvement and a spirit of inquiry rather than the adoption of a specific program encourages teacher curiosity and a sense of agency" (p. 55).

Curiosity is the genuine desire to learn more, to investigate, to explore, and to challenge. Kaser and Halbert (2009) found that "the strongest school leaders are characterized by constant curiosity and a mindset of persistent inquiry" (p. 62). Curiosity flourishes in environments built on trust.

> Change involves learning to do something new, and interaction is the primary basis for social learning…New meanings, new behaviours, new skills, and new beliefs depend significantly on whether teachers are working as isolated individuals or are exchanging ideas, support, and positive feelings about their work. The quality of working relationships among teachers is strongly related to implementation. Collegiality, open communication, trust, support and help, learning on the job, getting results, and job satisfaction and morale are closely interrelated (Fullan, 2007, p. 97).

Fueled as much by emotion as by intellect, curiosity emerges through a genuine interest to understand more fully and explore more deeply. Cherkowski (2012) writes:

> Deep human capacities—such as love, joy and compassion—in the daily work of formal school leaders and teachers are more explicitly noticed, appreciated, and recognized as important components for fostering and sustaining teacher commitment for professional growth in learning communities. (p. 58)

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Curiosity stems from desiring to know differently rather than from a mindset of already knowing. As teachers become curious, they come to recognize the complexities of learning: "For complex learning systems, equilibrium is death, whereas operating far-from-equilibrium forces them to explore their spaces of possibility" (Davis, Sumara, & Luce-Kapler, 2008, p. 8).

A spirit of curiosity helps us cope with, and adapt to change. No matter how welcome, change requires a shift. "All real change," wrote Schön (1971), "involves passing through the zones of uncertainty…the situation of being at sea, of being lost, of confronting more than you can handle" (p. 12). Real change requires a shift in teachers' thinking about their role. Professional knowledge and competence is essential for teachers, as is the realization that these skills change over time and as a response to changing situations and new experiences. We must be adaptive, and part of our competence is learning when we need to change. As we learn and grow, our energy needs to be directed to new ways of teaching rather than in "sustaining an unrealistic expectation that [we] are to appear the most knowledgeable people in every situation" (Office of the Auditor General, 2003, p. 7).

When we put ourselves in situations that recognize this disequilibrium, trust—in our colleagues and ourselves—is essential. It requires that we approach these uncomfortable situations with a genuine attitude of curiosity. In fact, our beliefs and behaviours must work in concert, as we stretch and challenge each, coming to learn by thinking and doing. Fullan (2007) indicates the necessity to: "address [beliefs and behaviour] on a continuous basis through communities of practice and the possibility that beliefs can be most effectively discussed after people had had at least some behavioural experience in attempting new practice" (p. 37).

As behaviours affect beliefs, continued collaboration will sustain the energy to explore new methods and approaches and the conversations that occur as a result. Knowledge can be shared and practice can be deprivatized. This nesting of knowledge and practice within collaborative communities of practice allows for continual innovation and improvement and a nimble response to change. The social and intellectual support that professional communities offer provides a real opportunity for paradigm shifts:

> If teacher commitment is conceptualized more broadly as the desire to continue to grow and learn within a professional community of colleagues, the connection between teacher commitment and sustainable learning communities becomes quite clear. Sustaining vibrant learning communities requires more than teachers' commitment to remain within the organization—it requires a commitment to continued growth and learning that is shared with colleagues. (Cherkowski, 2012, p. 57)

> *Wendy, Brenda, and I worked together for several years. The time we spent together only increased our trust in our working relationship and inspired our curiosity. Watching each other work with students expanded our repertoire of strategies. We continued to explore ideas, such as moving beyond integrating English and Social Studies into Humanities, to making connections between Math, Science, and Social Studies. What we had previously seen as discrete, decontextualized subjects became fertile ground for integration. We used one another's strengths to strengthen our pedagogy. When we found overlaps and connections, we explored ways to embed these in our teaching. We became increasingly curious about one another's subject areas though we had previously been intimidated.*

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As the program developed, we consciously worked on balancing the disciplinary curriculum with the process curriculum, working with students to practise problem solving, foster community, and develop teams of students across grades. We were working with students to develop the skills we were still exploring: how to collaborate, trust one another, and maintain a spirit of curiosity during changing times. Out of a conversation between two teachers in the photocopy room had emerged a vibrant "school within a school" for 120 students. What had also emerged was a renewed professional commitment to working collaboratively to improve our practice.

As personnel changed, due to a variety of circumstances, we wondered what would happen to our practice and to the program. We knew we would need to adapt as new colleagues came to work with us, and that the program would have to adapt and change to respond to changing contexts. As we moved on to new endeavours, would we continue to collaborate with new colleagues in new environments? Would we find trust and community that helped to feed our curiosity? Would the program thrive? Would others come and continue to work with the students in their own collaborative endeavours? I can happily report that the answer to all these questions is "Yes," thanks to those teachers who continue to commit to the hard work of working together.

Conclusion

The world continues to change, with or without change in our education paradigms. However, student learning and the quality of the learning environment will become increasingly compromised if we do not adjust how we work and learn together in ways that more profoundly reflect the reality that humans need to work in collaborative, supportive, respectful, trusting, relational ways and to recognize new conceptions of learning grounded in complexity. Collaboration, built on trust and curiosity, can create environments that are responsive, adaptive, and proactive. Whether or not the existing conditions support or constrain our collaborative efforts, we can find space within, around, and through to one another. "If we are to work together more intelligently, we will need to choose processes that evoke our curiosity, humility, generosity, and wisdom. The ultimate benefit is that we learn that it is good, once again, to work together" (Wheatley, 2005, p. 124).

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Out of the Shadows: A Review of *Shadow Education and the Curriculum and Culture of Schooling in South Korea* by Young Chun Kim

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When I received the copy of *Shadow Education and the Curriculum and Culture of Schooling in South Korean* to review, I required a crash course in the system of supplementary schooling or private tutoring system (PTS) known as *hakwon*. I learned about practices, ideas, and beliefs that initially jarred my Western sense of K–12 education. This was unfamiliar territory. The author Young Chun Kim promises a postcolonial reading of education in South Korea when recalling his early pledge to "become a scholar who studied Korean stories and schooling rather than US theories or knowledge and use them for answers for Korean education" (p. v). Thus, upon completion of his North American PhD, he launched a distinguished career in his home country researching, conducting fieldwork, and writing, to acquire a comprehensive understanding of among other pursuits, how and why public schooling and hakwon intersect in South Korea.

After an initial reading of the book, I did some online sampling. Woonha Kim's *Confessions of a Hakwon Insider*, a TEDxYouth talk, is a popular example of available fare. As only a young person can do, Woonha claims to be an expert on hakwon because of his lived experience as a student in South Korea and his knowledge of the hakwon owned and operated by his parents. Young Chun Kim does not make such expansive claims; instead, he offers his extensive, thorough research to justify his argument. The author writes that South Korean curriculum studies have been dominated by Western ideas, and writes, "According to colonized notions of Korean pedagogy, uniquely Korean practices and experiences were invisible, neglected, or dismissed as unimportant" (p. 11). Ultimately, in the final chapters, he completes a case for the international field of Curriculum Studies to include systems of education different from the West, and to understand, in a contextualized way, why millions of people are dedicated to hakwon, a system that does not operate or look like Western school systems. He has devoted his career to understanding schooling in his country. Now he seems set on decolonizing Western ideas about education in South Korea.

Summary

The book begins with both a preface and prologue that set a purpose for writing that is appropriate for a book that purports to be a qualitative case study. It must be said it is the largest, most expansive case study I have ever encountered. Reminiscing about his graduate studies in the US, his subsequent career, and his goals to use postcolonial theory to make sense of his vast research in South Korea, he draws on completed work as well as additional interviews, observations, and document analysis to create the case study. The prologue describes a day in the life of a typical hakwon student that begins at 7:00 a.m. and ends in exhaustion at 11:00 p.m. Kim reports being troubled by the lived experience of the children in the study. He set this reader up to accept my first impression that the rigorous routine of hakwon is damaging to children. Nevertheless, in the comprehensive chapters to follow, which are devoted to history, statistical

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charts, curricula descriptions and interview data, the author sheds brighter light on the culture of hakwon.

Chapter 1 sets the globalized stage of education in South Korea, a country deeply invested in "world-class achievement" as measured by performance on PISA tests and by admission to highly prestigious post-secondary institutions. The tension between public schooling, which does not enjoy the confidence of Koreans, and hakwon, which certainly does, is a central theme of the book. "Like public school, hakwon education is a major part of Korean students' educational lives: even lay people in Korean tend to attribute the prowess of Korean students to their hakwon education rather than to public schooling" (p. 3). The perceived superiority of hakwon over public education is a guiding belief of the people. Parents put their money where their beliefs are, as evidenced by their personal spending on hakwon (PTS) of "1.5 times the total public education budget. In Korea, the total expenditures for private tutoring is 24 billion dollars" (p. 5). Hakwon is serious business. Hakwons benefit from nimble business practices, which are designed to realize higher scores on tests, be more appealing to parents, but also to generate higher profits. To illustrate the conflation of cultural practice and financial support, Kim writes, "Koreans even have a saying that finding the best hakwon for her child is a mother's way to show her ability and affection as a parent" (p. 5). Originally, I thought I'd be most interested in the postcolonial theorizing promised in the opening passages, but instead I was dazzled by the numbers, by the statistics, by the stories of family investment of time, money and human resources to drive an economy with education, to create a future for South Korea. Hakwon is a metaphor for the post-WWII national success story.

The History of Hakwon and its Manifestations

Chapters 2 through 6 explain in detail the history of hakwon, including the South Korean government's futile efforts to ban hakwon outright, and to reform public education and national curriculum sufficiently to make hakwon education redundant, perhaps even undesirable, to the culture. Kim's claims are supported in the literature:

> The growth of private tutoring service has been criticized for causing students' low engagement in school, placing a heavy financial burden on families, and contributing to overall education inequality. The South Korean government has thus sought over the years to implement various polices aimed to reduce the growing parent expenditure on private tutoring. (Lee & Shouse, 2011, p. 212)

The economic and equity arguments against hakwon must contend with the historical legacy and the public confidence in PTS to make South Korea successful on the world stage (Bray & Kwo, 2013). South Korea has endured hostile occupation by other nations, notably Japan. The Japanese rule of Korea ended in 1945–46. Hakwon, derived from the Chinese "place of learning," as a practice in Korea has Japanese origins. Culturally, education is linked to social mobility and status, the practice of hakwon has served to intensify competition in all school systems (Kim, p. 126). Competition for admission to university in Korean is fierce, and since the lift on the Hakwon ban in 1992, has increased as the lure of admission to prestigious international universities has entered the fray.

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Since 1961, the government of South Korea has tried everything to strengthen confidence in public schools, as well has made efforts to limit or ban Hakwon. Initially, the history of hakwon in Korea to me seemed like a primer on the perils of large school tests for the purposes of social stratification; however the confidence in, and commitment to, large scale testing as a certain measure of academic success appears to be unquestioned, even by the author (p. 137). Couple the pressure to compete for prestigious placement at the leading national universities (only 4% of students are accepted to the top university) with a pre-existing entrepreneurial spirit, laced with an insatiable appetite for perceived social and economic advantage offered by education, and you have a runaway train of national ambition. From evidence provided in the book, hakwon does not appear to be going anywhere, other than to the next perceived level of achievement.

Chapter 3, devoted to the most prevalent types of hakwon, identifies the three-legged stool of hakwon success: focus on the test; studying harder; and the future. It's a heady combination. The national effort to "study to the test" is breathtaking (p. 90, 131). Hakwon sessions (which may be group classes, individual tutoring, or supported learning online) begin after public school is finished at mid-afternoon. After a brief break for a meal, the hakwons run until 8 – 11 p.m. depending on the age of the children. Many of the large successful hakwons have their own bus systems. If that's not sufficient evidence for the support of "study harder" ethos, consider that many students in the final years of high school spend 10 – 12 hours per day at hakwons on the weekend cramming for the tests. Academic credentials are considered the passport to successful adult life (Kim, p. 126). Apart from public confidence, the author shows repeatedly throughout the text that hakwons are free of many of the restrictions that public schools must adhere to. So, as individual businesses, not official institutions of learning, hakwons are able to experiment with innovative teaching methods, develop their own textbooks designed to breakdown the national curriculum into digestible pieces, operate with smaller class sizes, and adopt unregulated hiring practices. Even physical punishment is allowed in hakwon. The practice of hakwon is prevalent throughout southeast Asia, to India and beyond, and presents ethical dilemmas for Western researchers in education (Yung, 2015).

Kim reports that the ubiquitous presence of hakwons has had deleterious effects on public schools. For example, I found it troubling that public teachers' expect that students will learn difficult content at the hakwon, therefore relieving them from providing adequate instruction (p. 36). Kim (2016) notes,

> The biggest difference between hakwon instructors and school teachers in Korea is the security of their jobs: when one becomes a schoolteacher he or she can remain in the job for the rest of their lives; however, if hakwon instructors fail to provide their ability to teach, they fall behind and consequently the might lose their jobs." (p. 187)

Hakwon teachers must compete for student and parental approval. The freedom from government regulations also means that hakwons can create homogenous student populations through selection, ability grouping, as well as subject and student interest specialization. In contrast, public schools must accept all students and teach the national curriculum.

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It's not an overstatement to say that I was gobsmacked by the details of how hakwons operated as businesses, and how much pressure is put on the students subjected to compete for post-secondary placements. Anecdotally, a graduate student who taught in several hakwons told me that the day that university acceptance results are shared is known as Suicide Day. Also amazing were the variety of hakwons. There are English hakwons, math hakwons, boarding-school hakwons, deluxe hakwons, cut-rate hakwons, and the increasingly popular online hakwons for every grade level. Only the most impoverished students in the country do not participate in hakwons. To some extent, government concern for equal access to education drove the efforts to control hakwons, but the efforts were unsuccessful. Kim also alludes to the inherent inequities of a privately financed shadow system, but acknowledges that parents' belief that children have the best future prospects through the best possible education is paramount. Parental investment in hakwon is a type of retirement saving because adult children have some measure of responsibility for the care of aging parents. The desire for superior education is complex.

Structure of the Argument

The organization of the dense information-laden chapters is logical; the style is accessible, with topic sentences followed by numbered points of supporting information. Kim claims the book represents a "first international qualitative case study on hakwon education, and thus, might be used as a guiding example for succeeding research" (p. 196). The site for the case study is massive, including numerous public schools and hakwons in Korea. Kim admits,

> Fortunately, I was able to collect extensive data since I am a native Korean, know the educational systems very well, and had visited them many times for prior research… Since my research objective was to understand the positive roles of hakwon education, the research participants were friendly and helpful. (p. 196)

No doubt, given the lingering motive of profit in hakwon. Acknowledging that readers who lack his insider perspectives, like me, who may carry preconceived unfounded notions, like me, he writes: "I hesitated to present images of Korean education which were not familiar to readers and were opposite to their previous perceptions" (p. 197). He goes on to say that he anticipated international readers might be shocked by the additional time students spend at hakwons, and consider this practice "not educationally or developmentally appropriate" (p. 197). Guilty as charged.

The last two chapters comprise the argument alluded to in the opening chapter. Kim confronts the inherent tensions in the present South Korean educational system, and he has provided extensive, in-depth description of the programs, and to some extent the experiences of the students and teachers. He addresses the issues of inequality, international misconception, and cultural stereotypes that result when the whole society is "teaching to the test." He offers new images to displace existing stereotypes. Readers might see the following from reading his book: that hakwons threaten public education; that hakwon education prevails, creating a second life for students; "that education is bought and sold for commercial purposes, that it is advertised as a commodity like cars and clothes, and if you have more money, you can buy better products;" and finally; that "students are obsessed with competition and survival" and see hakwon as the best

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way forward (p. 197). Kim predicts that Western readers may see his findings as "Strange? Primitive? Unproductive? Too competitive? Underdeveloped?" (p. 197). At first reading, I did.

Taking up postcolonial theory of the Other, and fortified with Deleuze's notion of the "body without organs," in the concluding chapter "Questions without Organs" (p. 198), the author launches his argument in full. Yes, two school systems exist in Korea and it's impossible to see one without the other. It's a case of this and that. He challenges curriculum theorists to ask what he calls untraditional questions, to look beyond their preconceived assumptions and stereotypes of the "Far East." He marshals Pinar's (1994) theory of *currere* to challenge researchers to see hakwon in richer, more descriptive ways. He asks curriculum researchers to consider how Korean education is positioned as Other in Western scholarship. Failing to do so is to deny what hakwons do well: to engage students in superior educational achievement. Western scholars are urged not to perceive South Korean education from a negative perspective,

> simply because it is Oriental and unfamiliar to scholars in the West; simply because it is the other and is marginalized from our perceptions of schools as central and legitimate; simply because it is opposite to the basic philosophy of education in the West which emphasizes progressive education and a child-centered curriculum. (p. 201)

It's a big finish. Am I completely convinced? Not entirely, but I continue to think about how I have been trained to see what I see in schools. Perhaps in the face of my own chasm of ignorance, I need to readjust the lens.

Conclusion

Before Western readers like me take too smug an attitude about the harsh rigours of hakwon's reputation for teaching to the test, we may wish to consider how similar programming outside of school exists to benefit children from affluent families in much of North America. Many in the West believe that extracurricular activities determine success in later life, or consider the money to fund recreational hockey, a largely private organized sport in most jurisdictions, an investment to chase the dream of an NHL career. Investing in dreams to fulfill parents' aspirations appears to be pervasive beyond South Korean borders. Before reading this book, I knew precious little about transnational experiences of private tutoring, class anxiety, academic competition, and cultural conflict. Kim's book taught me a great deal, and caused me to notice more about misinformed assumptions that circulate in my educational community.

As luck would have it, a former graduate student had been a teacher in South Korean hakwons for a number of years. I called her. She described her experience as a hakwon teacher as life-changing, for the cultural knowledge gained through immersion in a different style of education. Originally hired to provide students with "natural conversation," her native-English speaker status gained her a teaching position before she had Canadian certification. The opportunity to travel, to make a good salary, to gain teaching experience set her up for a successful career as a teacher and administrator back home in North America. Her rich description of life at the hakwon mirrored much of what I read in *Shadow Education*. She affirmed that children were often tired, during the additional hours of evening instruction, especially so for high school students whose days were longest. Students did achieve amazing

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results. She noted also that hakwon counsellors taught mindfulness to teach self-discipline and self-control, which were beneficial to students and teachers. The hakwon and student families shared the values of saving face, family honour and status, which made for a unified learning community. My skepticism lurked in my questions. Finally, I asked the predictable question, would you send your own children to a hakwon? She said yes.

In recent years, a New York-based, self-declared Tiger Mom has gained significant press attention for her theory of raising exceptional children. Reading *Shadow Education and the Curriculum and Culture of Schooling in South Korea,* reminded me of her recipe for accomplished children. Hakwons are "a major social policy issue in East Asia, and particularly South Korea" (Lee & Shouse, 2011, p. 212). Unsurprisingly, a form of hakwon has migrated to the coasts of continental U.S.: "Korean migrants to the United States largely retain the mentality that admission to prestigious universities is the surest route to success" (Yi, 2013, p.190). Yi invokes the Tiger Mom stereotype, and posits a new stereotype, the Liberal Elephant, as a Western counterpoint that contests the hakwon philosophy. When Korean immigrant parents attempt to import hakwon to the U.S., they come up against a liberal humanist culture that purports to value individual interests, talents, and growth, which Yi suggests is a cause supported by actively proselytizing Christian churches. The liberal elephants resist the cultural belief in hakwon: "Caught between Tiger Moms and Liberal Elephants, many Korean immigrant parents seemed to genuinely struggle over the way to raise their children in America" (Yi, 2013, p. 194). I think I came to this book as a liberal elephant with a good deal to learn.

Kim emphasized from the onset that hakwon education was worthy of serious research in the Western-dominated field of curriculum studies. Initially, I was mesmerized by Gangnam Style entrepreneurship of hakwon. Kim has written 39 other books, and more than 50 articles, on South Korean education. He has a lot to say. I acknowledge his expertise, and continue to come to terms with how my cultural beliefs were a barrier to understanding the book.

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