

Identifying the Impact of Culturally Relevant Pedagogy: Evidence of Academic Risk-Taking in Culturally and Economically Diverse Nova Scotia Classrooms

Jennifer Mitton and Anne Murray-Orr

Volume 44, Number 4, Winter 2021

URI: <https://id.erudit.org/iderudit/1085210ar>
DOI: <https://doi.org/10.53967/cje-rce.v44i4.4811>

[See table of contents](#)

Publisher(s)

Canadian Society for the Study of Education

ISSN

0380-2361 (print)
1918-5979 (digital)

[Explore this journal](#)

Cite this article

Mitton, J. & Murray-Orr, A. (2021). Identifying the Impact of Culturally Relevant Pedagogy: Evidence of Academic Risk-Taking in Culturally and Economically Diverse Nova Scotia Classrooms. *Canadian Journal of Education / Revue canadienne de l'éducation*, 44(4), 1084–1115.
<https://doi.org/10.53967/cje-rce.v44i4.4811>

Article abstract

This article reports on findings from a qualitative research study investigating ways to support learners from populations who have been historically underserved by the Nova Scotia education system, particularly African Nova Scotian and Mi'kmaq learners, and learners who experience poverty. Working with middle school teachers located in rural schools with a proven track record of enabling students to succeed and thrive, we spent two years in their classrooms observing and documenting pedagogical practices in the teaching of science and social studies. The results of this research not only complement what is known about how to support vulnerable learners in diverse school contexts, but also provide insights into how these teachers created conditions in which students felt able to take risks academically. The findings of this study show how the idea of academic risk-taking can complement, and expand, scholarship on culturally relevant pedagogy.



Identifying the Impact of Culturally Relevant Pedagogy: Evidence of Academic Risk-Taking in Culturally and Economically Diverse Nova Scotia Classrooms

Jennifer Mitton

St. Francis Xavier University

Anne Murray-Orr

St. Francis Xavier University

Abstract

This article reports on findings from a qualitative research study investigating ways to support learners from populations who have been historically underserved by the Nova Scotia education system, particularly African Nova Scotian and Mi'kmaq learners, and learners who experience poverty. Working with middle school teachers located in rural schools with a proven track record of enabling students to succeed and thrive, we spent two years in their

classrooms observing and documenting pedagogical practices in the teaching of science and social studies. The results of this research not only complement what is known about how to support vulnerable learners in diverse school contexts, but also provide insights into how these teachers created conditions in which students felt able to take risks academically. The findings of this study show how the idea of academic risk-taking can complement, and expand, scholarship on culturally relevant pedagogy.

Keywords: middle school, culturally relevant pedagogy, academic risk-taking

Résumé

Cet article rend compte des résultats d'une recherche qualitative étudiant les moyens de soutenir les apprenants issus de populations historiquement mal desservies par le système éducatif de Nouvelle-Écosse, plus particulièrement ceux d'origine africaine et Mi'kmaq, ainsi que ceux qui vivent dans la pauvreté. En partenariat avec des enseignants du secondaire d'écoles rurales ayant fait leurs preuves en matière de réussite et d'épanouissement des élèves, nous avons passé deux ans à observer et à consigner les pratiques pédagogiques adoptées en classe dans leur enseignement des sciences et des études sociales. Les résultats de cette recherche, en plus d'enrichir les connaissances sur la manière de soutenir les apprenants vulnérables dans divers contextes scolaires, apportent des indications sur la manière dont ces enseignants ont réussi à créer des conditions dans lesquelles les élèves se sentent capables de prendre des risques sur le plan scolaire. Enfin, cette étude démontre comment la notion de prise de risques sur le plan scolaire peut parfaire et élargir l'éventail des connaissances sur la pédagogie culturellement adaptée.

Mots-clés : école secondaire, pédagogie culturellement adaptée, prise de risques sur le plan scolaire

Introduction

This article reports on findings from a research study investigating ways to support learners from populations who have been historically underserved by the Nova Scotia (NS) education system (Mitton & Murray-Orr, 2017; Murray-Orr & Mitton, 2019), particularly African Nova Scotian (ANS) and Mi'kmaq learners, and learners who experience poverty (Kakembo et al., 2014; Province of Nova Scotia, 2016). The achievement gap¹ in this province is a complex issue pointing to historical systemic inequities (Black Learners Advisory Committee, 1994; Lee & Marshall, 2009; Province of Nova Scotia, 2016; Thiessen, 2009). In a province where the rate of children living in poverty is increasing (Frank, 2015) and the underachievement of ANS and Mi'kmaq learners has been identified (Kakembo et al., 2014; Province of Nova Scotia, 2016), the need to better understand how to support learners from vulnerable populations is significant. To this end, recent efforts in NS at the provincial level include the formation of the Inter-University Research Network (IURN) guided by a steering committee comprised of representatives from across the province responsible for teacher education (Nova Scotia Department of Education and Early Childhood Development, 2020). The primary mandate of this network is to establish, and contribute, to a knowledge base about the causes, successful interventions, and results of endeavours that focus on the achievement gap in NS schools. Supported by IURN funding, the overall goal of this research study was to identify middle school (Grades 5 to 8) teaching practices² that enhance students' literacy and learning in the subject areas of science and social studies, paying particular attention to teachers' understanding of the impact of their pedagogy on historically under achieving populations. Working with middle school teachers located in two rural schools with a proven track record³ of enabling students to succeed and thrive, we spent two years in their classrooms observing and documenting literacy practices infused into the teaching of science and social studies. In response to what was identified in the literature and known

1 The achievement gap is understood as a social construct in how race, poverty, and historical injustices have intersected to create imbalance and present-day situations where certain groups are categorized as underachieving.

2 At the outset of the study, in consultation with school principals, we invited teachers who focused on the following in their teaching: communicating high academic expectations to cultivate learning, fostering cultural competence through relevant curriculum planning, and raising critical consciousness through the doing of authentic tasks (Ladson-Billings, 2014).

about the academic achievement challenges of particular populations in Nova Scotia, our research focused on Grades 5 to 8 as a time when learners are especially vulnerable and in need of excellent teaching to ensure their success (Fang, 2006; McKenna & Robinson, 2014; Monte-Sano et al., 2014).

The results of this research not only complement what is known about how to support vulnerable learners in diverse school contexts, but also provide insights into how these teachers created conditions in which students felt able to take risks academically (Beghetto, 2009). We developed the term academic risk-taking (ART) to reflect the pivotal pedagogy of teachers intersecting with classroom contexts in which conditions for learning were nurtured. Thinking about ART in this way enabled us to understand what needs to be pedagogically in place for learners who have historically struggled to be willing to engage in risks for the purposes of learning. The purpose of this article is two-fold: First, to delve into teachers' understanding of their pedagogy as they work in culturally and economically diverse rural classrooms. Second, to discuss the possibilities that practices associated with academic risk-taking hold in complementing, and expanding, scholarship focused on culturally relevant pedagogy.

Academic Risk-Taking: Adolescents' Willingness to Engage in Risk-taking for the Purposes of Learning

The notion of risk-taking denotes positive and negative implications in the context of adolescent development (Duell & Steinberg, 2020). Generally, risk-taking is a behaviour with differing prospects of good and bad consequences (Crone et al., 2016). Engaging in risk is couched in choice and outcome and adolescents are viewed as more likely to engage in risks than children or adults (Arnett, 1999; Silverman et al., 2015; Telzer, 2016). Located in contexts outside of school, the bulk of this research tends to focus on negative risks, particularly delinquency or substance abuse (Duell & Steinberg, 2019). More recent research has shifted to also consider positive, adaptive (or pro-social) risk-taking behaviours of adolescents (Duell & Steinberg, 2019, 2020; Lerner et al., 2015; Telzer et al., 2014) and their importance to the fostering of well-being (Do et al., 2017). While this is a significant area of study in the research literature, less understood is how positive risk-taking behaviours in classrooms might be cultivated (Beghetto, 2009; Byrnes et al., 1999; Clifford, 1991).

Outside of school, adolescents are more likely to take risks; in the classroom, the reverse is true. Youth are less likely to engage in risky behaviours associated with learning, especially when results are uncertain (Sharma, 2015) and the opportunities to make mistakes in front of others or to be rejected or mocked are high (Atkins et al., 1991; Beghetto, 2009; Dweck, 1999). Compounding the social ramifications of risk-taking is learner reluctance to engage in behaviours that may result in lower grades and/or setbacks (Allmond et al., 2016; Teagarden et al., 2018). When it comes to creative and innovative learning, however, risks must be taken (Allmond et al., 2016). Contributing speculative ideas, asking questions, and attempting to enact new skills are behaviours associated with risk, behaviours that are at the centre of reasoning. Scholars agree that to solve problems or deconstruct ideas, one must be willing to engage in the effort despite uncertainty. This is referred to as intellectual risk taking (IRT), and it is commonly understood as adaptive learning behaviours in which learners share ideas that may be incomplete or skills that may be partially developed, as revealed through the kinds of questions asked, a willingness to try alternative and innovative approaches to problem solving, and efforts to overcome difficulties (Çetin et al., 2014; Robinson, 2012). In doing so, the possibilities of making errors or appearing less knowledgeable or skilled in front of others is enhanced (Beghetto, 2009; Byrnes et al., 1999; Clifford, 1991). While engaging in IRT does increase this likelihood, IRT is identified as positive, or adaptive, in that such behaviours demonstrate learners engaging in strategic decision making, and actions, for the purposes of learning. Advocates argue that taking risks enhances learners' perceptions of academic identities (Bransford & Donovan, 2005; Clifford & Chou, 1991) and those who take risks are more likely to learn (Ames, 1992; Bråten & Strømsø, 2004; Dupeyrat & Mariné, 2005). Yet, as learners age, their tolerance for failure decreases and they are less willing to take risks (Beghetto, 2009; Clifford et al., 1990, 2014), circumstances that may be partially attributed to the importance of grades (i.e., post-secondary plans, scholarships, etc.) (Dachner et al., 2017; Teagarden et al., 2018), the fear of negative criticism (Çetin et al., 2014; Varişoğlu & Çelikpazu, 2019), and the impact of poverty on learner willingness to take risks (Brownell et al., 2006, 2010; Clifford et al., 1990; Roos et al., 2006; Tan et al., 2016). Furthermore, if a teacher's expectations are not understood, or perceived as beyond the student's own abilities, again, learners are less likely to participate in IRT (Clifford et al., 1990; Dachner et al., 2017; Teagarden et al., 2018).

To engage students in IRT, the research has revealed that context is significant (Rohrman, 2005; Sharma, 2015), sequencing of instruction is vital (Smail & Kucan, 2020), learner ability and interest in topic are critical (Beghetto, 2009), and teacher expectations can impact learner inclination toward learning (Dachner et al., 2017; Polikoff & Struthers, 2013). In our review of the literature, we found little reference to what teachers may do to foster IRT in middle school classrooms other than efforts in elementary science (Beghetto, 2009) and elementary and secondary mathematics (Allmond et al., 2016; Atkins et al., 1991; Sharma, 2015). Our decision to develop, and use, the term ART is in response to our understanding of culturally relevant pedagogy (Ladson-Billings, 1995) and our knowledge of situated sociocultural views of knowledge and learning (Gee, 2007). Ladson-Billings (1995) emphasizes that academic progress is impeded in contexts in which students are marginalized due to factors including race, ethnicity, and socio-economic status, and Gee highlights the importance of the material and human environment around learners, with its affordances or possibilities for action/learning. These constructs enabled us to view ART as ways of knowing that teachers cultivated in trust with students over time, and in place, and which revolved around an emphasis on learning and communicated high expectations. In these classrooms, learners felt secure to take steps forward into less certain territory and to push themselves to think, write, speak, and act.

Participants' teaching provided tangible evidence of how ART may further complement understandings of CRP when working in culturally and economically diverse classroom contexts.

Theoretical Framework

Two theories underpin this research study. The first theory is the conception, and evolution, of culturally relevant pedagogy (CRP) (Aronson & Laughter, 2016). Ladson-Billings (1995, 2014) outlined three interconnected dimensions of CRP: (1) academic success: the intellectual growth that students experience in response to elevated learning expectations reinforced by suitable instructional support; (2) cultural competence: the ability to connect to and help learners appreciate and celebrate their cultural backgrounds while acquiring understanding of other cultures; and (3) sociopolitical consciousness: the ability to foster learners' critical awareness and their knowledge and skills to address

authentic problems. Drawing upon the foundational work of Ladson-Billings (1995) and others (Gay, 2000; Neito, 2002), scholars Brown-Jeffy and Cooper (2011) examined CRP scholarship through the lens of critical race theory (CRT) and argued that “race must be considered in how culturally relevant pedagogy is enacted...as critical race theory brings attention to the effects of racism and challenges the hegemonic practices of White supremacy as masked by a carefully (re)produced system of meritocracy” (p. 70). Brown-Jeffy and Cooper’s (2011) model of CRP teaching behaviours is comprised of five themes: identity and achievement, equity and excellence, developmental appropriateness, teaching the whole child, and student–teacher relationships (p. 72). The model attends to tenets of CRT to show the importance of race and the presence of racism. CRP teaching behaviours (Brown-Jeffy & Cooper, 2011) are most associated with scholarly principles of risk-taking, since they require a pedagogical ability to make instructional decisions that encourage learners to engage in risk based on knowledge of curricular expectations interplaying with social dynamics, the classroom environment, and the cultural backgrounds of those present. The teaching behaviours of CRP in relation to fostering risk-taking are explored in the classrooms and literacy practices of teachers in this study.

The second theory we draw upon is the situated sociocultural view of knowledge and learning (Gee, 2007). Gee’s conceptualization of learners’ interactions within the classroom environment sharpened our attention upon learners’ responses to the pedagogical decisions of their teachers, particularly the kinds of literacy practices, events, and texts (Francois, 2013) that elicited their willingness to take risks. Conceptually, we understand teachers’ knowledge of planning, pedagogy, and student learning as revealed through accounts and observations of participants’ teaching in which they described, and we witnessed, an array of practices that encouraged learners to form speculative ideas, ask questions, and attempt new skills (Beghetto, 2009). Rooted in these instances is knowledge of their students, their backgrounds, and their communities, particularly how positive relationships and high academic expectations were impactful upon learning. In what follows, we discuss participants’ pedagogical decision making and its influence upon learner risk-taking, as viewed through accounts and observations over a two-year period. We outline how ART is a useful term in understanding the impact of CRP teaching behaviours in participants’ pedagogies and their awareness of how best to use the affordances of the material and human environment to benefit students’ learning.

Methodology

Approaching this phenomenon qualitatively (Merriam & Tisdell, 2016) over two academic school years, we maintained a focus on six experienced middle school teachers as they taught in rural schools comprised of culturally and economically diverse populations. Using a multiple-case study design focused upon a common case (Yin, 2018), our exploratory intent was to document teachers' pedagogical decision making and student responses. Case study design is well aligned with research that investigates a current phenomenon and is shaped by considerable contextual circumstances (Yin, 2018; Yin & David, 2007). Both school sites are located in a region where child poverty rates are documented at over 30%, and since 2015 NS is the only province where child poverty has increased (Frank & Fisher, 2020; Statistics Canada, 2019). The financial vulnerability of the learners making up the populations of both schools is significant, a condition which all of the teacher participants identified as informing their teaching and service involvement.

At the outset of the study we approached administrators of the two middle schools located in different regional centres of education³ to work with us as partners to identify middle school teachers who demonstrated success in terms of academic achievement and relationships with students in the target populations. When describing what we understood as success, we explained that while achievement data was a way to view effective teaching, we were also very interested in working with individuals who focused on the following: communicating high academic expectations to cultivate learning, fostering cultural competence through relevant curriculum planning, and raising critical consciousness through the doing of authentic tasks (Ladson-Billings, 2014). These preliminary discussions enabled administrators to identify teachers who fit these criteria; these teachers were then invited to an initial meeting to discuss, and confirm, participation. Following this start, the research went ahead in one school, but due to delays in receiving approval compounded by job action⁴ in 2016–17, we were not able to gain access to the other

3 Regional Centre for Education is the term used in Nova Scotia to describe what is commonly known as school boards or districts in other contexts.

4 Between early December 5, 2016 and February 21, 2017, NS teachers and school board personnel followed work-to-rule procedures (The Canadian Press, 2017) due to ongoing contract negotiations between the NS government and the NS Teachers Union.

school in a different regional centre for education. Therefore, the data collection in the second school did not happen until the 2017–18 school year.

Site 1 (2016–17): New Learning Academy

New Learning Academy (NLA), where data were collected in 2016–17, was a P–8 school of approximately 550 students in a mid-sized town in a rural area of the province. NLA's demographics included a significant population of ANS learners as well as learners who experience poverty. To support students and their families, the school ran a number of programs to help mitigate food insecurity; this included a daily breakfast and lunch program as well as a weekend initiative where backpacks of food were sent home. Programs to address clothing and school supply needs and extracurricular activities were also in place. Four teachers took part in the research conducted at NLA. The four participants were all experienced middle school teachers⁵ and were involved, and often led, a variety of extracurricular initiatives. Below provides a brief description of each participant at the time of the study and their teaching responsibilities:

- Foley Mackenzie: Grades 7 and 8 Science; eight years teaching experience
- Gina Sears: Grade 8 Social Studies and Art; 15 years teaching experience
- Jackie Purcell: Grade 5 all subjects; 32 years teaching experience
- Paige Raymond: Grades 5 and 6: ELA and Social Studies; 26 years teaching experience

Site 2 (2017–18): Highlands Middle School

Highlands Middle School (HMS), where data were collected in 2017–18, was a Grade 5 to 8 school of approximately 575 students in a small town situated in a rural area with a small population of ANS students and a significant population of students who experience poverty. HMS ran a variety of programs to support students and their families; these programs included a breakfast program, school supply needs, and a variety of extracurricular initiatives, including an African Drumming group. One participant was an experienced

⁵ All names (schools and teachers) are pseudonyms.

teacher and the other was an early career teacher. A brief description of each participant at the time of the study and their teaching responsibilities follows:

- Jeremy Spencer: Grade 8 ELA, Social Studies, Health; Grade 7 and 8 Physical Education; 20 years teaching experience
- Marla Griffin: Combined Grade 5/6 all subjects; four years teaching experience

Methods of Data Collection

From the beginning of our study, we noted participants' efforts to nurture elements of culturally relevant pedagogy as part of their daily teaching routines. The data collection methods included: weekly observations of participants' teaching as well as two interviews with teacher participants and two focus group interviews with student participants from Grades 5 through 8. Interviews with teacher and student participants were conducted at the beginning and end of the data collection period in each school site.

Observations. As consistently as possible, a member of our research team conducted observations in the classrooms of the teachers identified in each school once a week. There were weeks when observations were not possible due to school events, job action, snow days, and student teachers teaching in the classroom. To increase reliability, one co-researcher led data collection at each school. Author A led the data collection at NLA and two research assistants (RA) typically accompanied her. Author B led the data collection at the second school (HMS) and one RA accompanied her. Field notes were taken during observations, to describe the pedagogical practices teachers used to promote learning in science and social studies. A total of 84 classroom observations were conducted (NLA: 54; HMS: 30).

Teacher interviews. The teacher participants at NLA were interviewed two times over the 2016–17 school year, at the beginning (October) and end of the data collection process (April/May), to learn more about how they plan for, teach, and assess lessons that incorporate literacy practices to promote the learning of ANS students as well as learners who experience poverty. Similarly, teacher participants at HMS were interviewed twice, at the beginning (October) and at the end (February) of the data collection process. The audio-recorded interviews ran approximately 30 to 60 minutes and included

questions about their understanding of literacy in the content areas and culturally relevant pedagogy.

Student focus group interviews. Focus groups were held with students in classrooms of each of the teacher participants at NLA in early December 2016 and February 2017 (Grades 5 to 8). Focus groups were held with students in classrooms of teacher participants at HMS in December 2017 in one classroom and February 2018 in the other classroom. Student focus group interviews were audio-recorded and were roughly 30 to 45 minutes; questions included discussions about their experiences at NLA or HMS as well as their experiences learning science and social studies with the teacher participants.

Data Analysis

Data analysis was guided by our primary aim to determine teachers' understanding of their pedagogy as they worked in culturally and economically diverse rural classrooms. A secondary related purpose was our intent to identify, if possible, the literacy practices that teachers used to foster learning in science and social studies. The process began at the outset of the study, as field notes of classroom observations were generated and first interviews were conducted; these emergent and recursive analysis practices (Merriam & Tisdell, 2016) were ongoing, as we aimed to identify common patterns across classroom observations and interviews as they happened. Analyzing in an ongoing manner enabled us to move between inductive reasoning (paying attention to what was emerging) and deductive reasoning (confirming if common patterns were holding true across different data sets) (Merriam & Tisdell, 2016; Saldaña, 2013). Coding common patterns was based upon the purpose and theoretical framework of the study, specifically culturally relevant pedagogy (CRP) (Ladson-Billings, 1995, 2014), CRP teaching behaviours (Brown-Jeffy & Cooper, 2011), and a situated socio-cultural view of knowledge and learning (Gee, 2007).

Beginning with the coding inventory (Merriam & Tisdell, 2016) gathered over the course of 2016–17 at NLA, we then returned to analyzing the field notes from the observations and the interview transcripts by individually reading through the data and open coding, noting recurring patterns and comparing these to our initial coding efforts. Each member of the research team (Author A, Author B, and RA) then grouped open,

initial codes into tentative categories, creating analytic codes (Merriam & Tisdell, 2016). Equipped with these experiences and understandings, we similarly approached the process of data collection and analysis at HMS in 2017–18. Then we reviewed the overall data set at HMS followed by comparisons of both sets of data. The review and comparison of both data sets allowed us to identify references to academic risk-taking. With further analysis, understanding how teacher participants communicated and nurtured high academic expectations to cultivate student learning emerged.

Findings: Practices that Foster Student Willingness to Engage in Academic Risk-Taking

In this section, how participants fostered conditions in which learners felt safe and confident to take risks in their learning is presented. As detailed earlier, ongoing analysis led to identification of practices in which we saw participants' understanding and skill at fostering ART revealed in accounts of planning and teaching, witnessed in observations, and acknowledged by students. The following are snapshots of six common⁶ practices used to foster ART amongst learners. The selections were chosen to epitomize habitual practices demonstrated by all the participants in both school sites.

Fostering ART Practice 1: Communicating Belief in Academic Assets

All the participants wanted school to be positively memorable for the students they taught. To make these connections, participants emphasized that the learning strengths, or assets, that students brought into the classroom had to be highlighted and communicated. Identifying strengths and reminding students of these assets enabled teacher participants to change the conversation with individual learners who sometimes resisted doing tasks they perceived as difficult.

During an interview, Jackie described a memorable moment with a student, who had a reputation of resisting when encountering new tasks. Jackie said:

6 The phrase “common practice” is used to describe pedagogical practices identified across all six participants and which were conducive to the fostering of academic risk-taking and well aligned with CRP teaching behaviours (Brown-Jeffy & Cooper, 2011).

We were doing persuasive writing and [the topic] was “you are the teacher for the day, and what kind of rules would you like to have [in your classroom]”...the student goes, “This is really dumb.” And I said, “What do you mean?” And he said, “This is stupid.” So, I asked, “Why is it stupid?” He goes, “I don’t want to be a teacher.” I said, “Okay, well, persuade me why you don’t want to write this essay. I want you to write a persuasive essay telling me how stupid it is and why you don’t want to write it.” It was amazing! I showed his finished essay to a bunch of people and they said, “It is so well written” and I said in response, “Yeah. So, he can write a persuasive essay, maybe not on the topic I want, but he can do it!” (Interview, April 28, 2017)

Jackie’s emphasis on actively listening to the student as he resisted and responding in a way that showed her willingness to appreciate his point of view, exemplifies her knowledge on how to make this task manageable and enticing. In communicating her belief to him that his strong opinion about the task was an asset, something that he could use to fuel his writing, he saw possibilities for how he could proceed. Jackie also made use of this opportunity to provide a new story about this student to others by proudly sharing his work with her colleagues.

Jackie, like the other participants, was mindful of showing students how their strengths were a currency and could be used to help navigate tasks that might seem unappealing or challenging. Participants explained that the adaptation of tasks to make them relevant, accessible, and fair for students first began with reminding students of their strengths, what they knew and could do, as a way to build confidence for undertaking new tasks.

While the previous example highlights how Jackie was able to shift one student’s response from reluctance to engagement, such moments were not uncommon in teacher participants’ classrooms. Communicating belief in students’ abilities, and identifying tangible examples when they arose, was how teacher participants regularly engaged with learners, collectively and individually. For example, in the lead up to an activity in which students were to participate in an archeological dig, the following was observed in Jackie’s class,

Switching gears back to the archeology site, Jackie asked the class, “You are no longer students, who are you now?” The students replied that they were scientists/

archeologists, and one student used the pronoun “he” to identify who this person might be, and a student interjected to say, “You mean he or she.” Jackie paused and praised the awareness of the language being used to describe the possible gender identities of an archeologist... The excitement swelled in the room as the students began to dig into their individual plots of land. Everyone was involved... Jackie walked about the room, taking the time to point out excellent behaviours and findings. For example, she commented to the class to notice how Logan was handling the “diamond” he had found, only using his gloved hand to touch the artifact. A minute later she pointed out the teeny tiny artifact that two students had unearthed. Jackie was constantly circulating the classroom, offering praise, directions, and occasionally taking photographs using her iPad. (Classroom Observation, October 21, 2016)

Paying attention to the positive and to the strengths of each learner was an everyday occurrence in Jackie’s classroom, a way of knowing and being common to all of the teacher participants. It did not take a big or special moment in participants’ classrooms for them to notice a student’s uniqueness, no matter how small the contribution.

Fostering ART Practice 2: Cultivating Thinking Routines

Throughout the study, participants regularly described the importance of creating meaningful lessons and units of study that engaged students over time and the necessity of ensuring thinking routines were in place. Participants felt thinking routines that targeted student interests increased student buy-in. For example, Marla emphasized the need for regular opportunities for students to explore and showcase their interests. Marla described her success with a thinking routine she called “genius hour.” Marla said,

Last year I did “genius hour” and so the students got to do a project that they were passionate about. And it tied in with making good questions; we learned about research and evaluating sources and they were able to pick whatever they wanted... I’ve never seen the class so focused and on task and guiding their own learning... when the students realized that their questions were not getting the results they needed, they went back and rewrote their questions and [asked] “How come this website is not working?”... Giving that control over to them...making it so they

were the ones that [investigated] made it relevant and meaningful to them. (Interview, October 30, 2017)

Marla points out the intersection of elements that encouraged students to commit their time, thinking, and energies to a research project. Students' interests and choice were fundamental to the success of this project, but so was Marla's careful planning of a thinking routine that happened over time with a targeted focus on making good questions, a key ingredient to the research process.

Part of cultivating student mindset for engaging in thinking routines focused on academic tasks was participants' efforts in training students to make use of strategies that enabled them to rely upon themselves. As students worked through a series of mathematics tasks early in October, the following was observed in Marla's class:

Marla goes over to one student who is a bit frustrated. He has had his hand up for some time. She asks if he has asked an elbow buddy [for help] and he has not. She begins to sit down to work with him, and then stops. Marla states, "First, ask your elbow buddy." Marla then moves to another person, and this boy begins to talk with the boy seated beside him. A conversation happens and they seem to have found a way to keep thinking about the problem. Marla then talks with another boy who was doing nothing and seemed to be waiting for her. She speaks quietly to him about not just sitting and waiting but using his time well. She reminds him: "Ask an elbow buddy, or use other strategies, but don't just sit and wait." (Classroom Observation, October 20, 2017)

Teaching students strategies that they might use to further their own thinking, particularly when they experienced challenges, was common across participants' classrooms. Students were consistently reminded that they were capable of solving problems when they arose, and that they could rely on themselves and trust their peers to support them in such instances.

Providing students with thinking routines that enabled them to understand how to proceed with a task while they developed skills and strategies well-suited to the task was an integral element informing all of the participants' pedagogies. Thinking routines had an observed two-fold impact: Students could anticipate what was expected in relation to

the task, which, in turn, created secure conditions for positive risk-taking behaviors, such as speculating, asking questions, and making an effort to develop new skills.

Fostering ART Practice 3: Acknowledging Student Voice

Participants overwhelmingly described the importance they placed upon regular opportunities for the inclusion of student voice and how to nurture conditions so students could vocalize thoughts and ideas. Informing such opportunities, for participants, was an emphasis on teaching for responsible advocacy and how students could use their voice to navigate systems. For example, Gina focused heavily on citizenship education in the teaching of Grade 8 social studies. Her lessons included visits from local guest speakers, activities such as debates, and a mock election that mirrored a municipal election that was happening within their community. In the following, Gina described her students' responses to the mock election activity.

We had a good talk on Monday when we looked at the results. I asked, "How many of you, on the weekend, checked out who won?" A large percentage did because they wanted to know if their vote was similar to what the town had said. They were very passionate about the mayor...a lot of them might not have known which of the councillors won, but they had all checked in on the mayor results... these are the kinds of things that we need to do to be literate in how to vote, and how to...access different services that [they] might need. So, we've done a bunch of work on who do you call if you're not happy with the snow removal, if your streetlight's out, if you don't have a family doctor. (Interview, October 21, 2016)

As Gina mapped out the activities and content in which students engaged as part of this unit, she emphasized the importance of cultivating in students the knowledge and skills that could help them enhance the impact of their voice. Integral to the content and skill development planned in this unit was Gina's attention to literacy; for instance, in how she encouraged students to read closely and decode political statements and determine what they thought their community might need in terms of municipal policies and procedures. Gina explained,

By Grade 8, I'm trying to "make" good citizens and, and the curriculum is Canadian identity, so you have to be literate to be an informed citizen...and I want

them to be able to look at those political pamphlets and figure out what's the message [and] do I agree with it? (Interview, October 21, 2016)

Gina mindfully planned relevant activities and content to target student understanding of the tools needed to actualize their voice. For example, in the lead up to a visit from a local Member of Parliament (MP) where students had the opportunity to engage in conversation about matters identified as relevant to their community, Gina described to the class how to prepare.

Gina said she had checked over all of their questions for the MP...and explained that some questions had been repeated several times. For example, many students wanted to ask questions about the rising cost of university as well as the centre for homeless people closing in their town. Gina said these were all good questions, but they do not need to be asked over and over again. Gina explained that from this bank of questions she had chosen questions and asked each student if they would be willing to ask a specific question. The questions were well worded and challenging. For example, there were questions about the politician's personal decision to become involved in politics, about student loans for university, Canada's involvement in the UN, and who he thought might win the American election, "Trump or Hillary"? The majority of students said they would be willing to ask questions to the MP. (Classroom Observation, November 4, 2016)

Gina's efforts to make such moments memorable were not lost on the students. In an interview that was conducted several weeks after the visit, in response to a question about notable lessons, Eilidh, a student in Gina's class, commented, "In social studies, I liked how we invited [the MP] to the school, and we got to write down questions to ask him. Because that was cool" (Grade 8 Focus Group Interview, November 28, 2016). Data from both research sites demonstrated how participants fostered student willingness to take academic risks by educating students on how to actively engage in authentic tasks that showcased the power of their voices. To do so, advocating for students to understand the power of voice was couched in positive relationships and strategic planning.

Fostering ART Practice 4: Nurturing Willingness for Ongoing Assessment through Relationships

Prevalent throughout observations and descriptions of teacher participants' assessment practices was an emphasis on communication and multiple opportunities for students to demonstrate their learning. Teachers viewed their assessment practices as ongoing and connected to how well they conveyed goals in relation to monitoring and supporting the progression of students as they learned. Underlying participants' understanding of assessment was an emphasis on student relationships. Gina explained, "First and foremost it's the relationships with the kids...it's getting to know them on a personal level, knowing what they're doing after school and on the weekends, who's in their family and who they live with" (Interview, May 12, 2017). Participants acknowledged that when assessing students, one needed to be mindful of individual strengths and areas that students needed to improve upon. Gina explained that she saw student success as connected to how they felt about learning, and to document their growth she offered a range of assessment opportunities. For example, when students were learning about Japanese internment camps in Grade 8 Social Studies, Gina explained, "I do up projects that can have multiple possible formats.... We did work on the Japanese internment camps in Canada...so the students could write a poem, an essay, do a piece of art, or film a heritage moment" (Interview, May 12, 2017). Gina's students acknowledged her efforts and welcomed the different options when it came time for a summative assessment.

Tabi: I found the 1920s ad assessment option really did help me...I used to be really bad at social studies. And this year, it's one of my best classes...we're doing a lot more hands-on activities...And it was just like a lot of fun, trying to express what I thought [a 1920s ad] looked like. It gave us a chance to put our imagination to use. (Grade 8 Focus Group Interview, November 28, 2016)

As Tabi explained, she found this activity helpful as it enabled her to engage her learning through a different medium and emphasized the learning success she felt she was experiencing in Gina's classroom.

While Gina emphasized the importance of providing opportunities for students to capitalize on their strengths, she also acknowledged the need to push students to work on areas in which they needed improvement.

Like I feel like Grade 8 is such a big year...they go from being elementary kids to being [almost] high school kids...as the Grade 8 year progresses, I try to push them a little harder about what they can do. Like you would have seen in the Cold War unit, we're using proper terminology. I'm not trying to water content down. So, increasing their vocabulary [is important]; like this morning I was doing structured notetaking with them, teaching them how to take notes out of a book...I explicitly teach them how to study and we'll spend a couple of classes on that. I'm trying to build up their skills to be more independent when they get to high school. (Interview, May 12, 2017)

Like Gina, all the teacher participants saw value in preparing students for future learning opportunities and challenges. Fostering student understanding about new skills was a worthy endeavor in that it enhanced not only knowledge and skills but prepared them for future assessment tasks in ways that were safe and supportive.

Fostering ART Practice 5: Creating Conditions for Fair Assessment

Because teachers felt documenting student learning was dependent upon a combination of effective assessment practices, knowledge of students, and sound teacher–student relationships, they invested effort into creating opportunities for fair assessment conditions. For example, Foley, in his teaching of Grades 5 to 8 science, placed particular emphasis on the importance of determining what students could show in spite of the literacy challenges that some experienced. Foley explained,

They can listen to me, and they can spout it back out. They know what they're talking about. But they [may not be able to] write it down. But does that mean they're not meeting the outcome? No, it doesn't... But I'm only seeing some of these kids twice a week. So, I implement [literacy] strategies...I'm doing everything I can...the major change [in my assessment] and what I do is more observations and conversations. (Interview, October 21, 2016)

Foley's experiences speak to the depth of his understanding on how to view students who are respectful of their knowledge and skills. He described his responsibility in finding ways to see student learning as happening despite time constraints. In an observation of Foley's Grade 8 science class, the following was documented:

Foley explained to the students that they had done four labs, but some had not completed their labs.... A student said, “You could give zeroes”; Foley replied, “I don’t want to give zeroes; I want you to do well.” Foley explained that he was giving them the opportunity to do the labs they missed, and for those students who had completed all four of the labs, he had a new lab for them to do. Foley encouraged them to take advantage of the opportunity. (Field notes, October 7, 2016)

Opportunities for students to have extra time to do work did impact Foley’s already tight schedule, but Foley saw this opportunity to document student learning as more important. Students acknowledged Foley’s efforts to support their learning in a variety of ways, from new opportunities to complete missed tasks or in the midst of presenting ideas to classmates. Heather, a Grade 7 student, explained:

When we were doing our projects, like presenting our science fair just to the class, a lot of people were nervous to get up...Mr. Mackenzie, it was more like when you were up there [in front of everyone], when you said something he would be like “Yeah.” Like give you support when you’re up there to make you feel a bit more comfortable, which I found gave you a better presentation overall. (Grade 7 Focus Group Interview, May 26, 2017)

Informing the practice of creating fair assessment conditions for Foley, and the other participants, was the belief that hands-on learning played a pivotal role in supporting learner engagement, retention of content, and skill development. During the focus group interviews, students across the grade level groups (Grades 5 through 8) consistently identified hands-on learning opportunities as memorable lessons where they got to show and demonstrate knowledge and skills. For example, Melanie recalled a lesson in science in which students

...went outside, and we had a sheet [and] we had to look around at the rocks...and find like types of weathering and erosion. I thought that was a really good hands-on learning...because it was almost a scavenger hunt, so it made it almost more fun to look for them, but then you were also learning at the same time. (Grade 7 Focus Group Interview, May 26, 2017)

These examples demonstrate the essence of participants' dedication to creating occasions, and ongoing conditions, to support and record student learning as it evolved. In knowing there were multiple opportunities to demonstrate learning, students were willing to engage in positive risk-taking behaviours.

Fostering ART Practice 6: Making Learning Visible

Cultivating willingness for learning, participants felt, was connected to communicating strengths while also pushing students to engage in tasks that furthered growth, such as hands-on learning opportunities and performance-based tasks. For example, Jackie regularly expressed her belief in the idea that hands-on activities enabled students to make their learning visible and memorable. When discussing, for instance, how she incorporated hands-on activities during science lessons, Jackie explained,

We make puppets when we do levers, and we'll make an 18-hole golf course when we do inclined planes because I have thirty putters and golf balls. They spend so much time at each hole. That way, they remember what an inclined plane is—"Oh yeah, remember the golf course?" "Oh yeah, [it means] from a lower place to a higher place." (Interview, April 28, 2017)

The use of hands-on activities and games for learning was deeply connected to Jackie's assessment process. She explained how her use of such methods enabled her to prepare students for summative assessments effectively. Jackie noted, "So when it comes to an actual test they have to write, it all comes back to the students. Like, it's amazing how well they'll do" (Interview, October 21, 2016). Jackie also purposefully included games to enhance student learning. She used games to review material while making students feel comfortable and significant. Furthermore, these games played an important role in Jackie's assessment process. As Jackie explained, "Whenever I have an assessment, I give two weeks' notice before it...so we start reviewing, and I play [review] games in my classroom" (Interview, October 21, 2016).

Jackie's students were also aware of why they played games during class. For example, when asked what Jackie does to help them prepare for a test, multiple students mentioned playing games.

Brittany: The thing that [helps] are the games...it really helps. I've never really done that in any other class besides Ms. Purcell's. She's the one and only.

Sonia: Probably what helps me get ready for a test are the study sheets Ms. Purcell gives, because we talk about it before we go home and review it. And as Brittany said, we play the buzzer game and we sometimes play like other games. (Focus Group Interview, November 28, 2016)

By increasing their positive experiences with the learning of content and development of skills, Jackie intentionally enhanced her students' willingness and effort take risks. This process of incorporating hands-on learning activities also provided Jackie with valuable formative assessment data on each of her students prior to formally documenting summative grades.

Like Jackie, Marla believed in the power of collaboration and classroom community to make student learning visible. For example, in Marla's class, students worked in groups across multiple subject areas to solve math equations, to create Jeopardy-style games, and to help one another peer edit pieces of writing in their various subjects. Marla noted how important it was for students who identify as ANS to participate in collaborative work. Marla explained,

I find with our African Nova Scotian students, collaborative work, that's you know, what they excel in, so working with somebody, talking it out, the whole hands-on [approach], their writing, their gluing, the cutting, things like that. Rather than let's say, writing a test or writing an essay or things like that. (Interview, February 12, 2018)

Marla, an ANS teacher, recognized how the ANS students she taught excelled at working collaboratively, and she strove to provide them with diverse assessment opportunities to display their learning in ways that showcased their strengths. Marla explained that part of the reason that she did so much community building was so students could easily cooperate. Students in Marla's class knew they could approach any peer and ask for help and receive a positive response from them.

Overall, participants described the importance of enabling students to make learning visible. They noted the importance of nurturing conditions that helped students take

academic risks, preparing them for futures in which assessment would shape their learning and others' perceptions.

Discussion: Evidence of Academic Risk-Taking as Windows into the Impact of Culturally Relevant Pedagogy upon Diverse Learners

Recent global events have revealed complex, complicated, and contentious problems as the world attempts to address a myriad of economic, health, and social issues emerging from the pandemic. The nature of these problems demands creative and interdisciplinary methodologies: New ideas and approaches need to be considered. A willingness to solve problems reflects a willingness to embrace uncertainty. Simply put, risks must be taken.

When it comes to learning, frequency of risk-taking matters. Consistently revealing ideas as they develop, posing questions, and demonstrating the emergence of new skills are a sample of risk-taking in action. Regular effort to engage in such risks increases the likelihood of learning (Ames, 1992; Bråten & Strømsø, 2004; Dupeyrat & Mariné, 2005). Age also matters when it comes to risk-taking. We note that as learners grow older, tolerance for failure is reduced as the importance of grades, post-secondary plans, and fear of criticism impedes adolescent willingness to take chances (Çetin et al., 2014; Dachner et al., 2017; Teagarden et al., 2018; Varışoğlu & Çelikpazu, 2019). Context is also significant: Critical to fostering an appetite for risk-taking is learner ability and interest (Beghetto, 2009) and instructional sequencing that prepares students for more challenging tasks (Sharma, 2015). Above all, teacher expectations of learners are highly influential upon student disposition toward learning and a willingness to engage in adaptive learning behaviours (Dachner et al., 2017; Polikoff & Struthers, 2013). In the daily busyness of teaching, knowing how to cultivate risk-taking amongst learners (i.e., ask questions, share ideas, try new strategies/activities) (Beghetto, 2009) is an area that can be overlooked as teachers attempt to address dense curricula while managing busy timetables and large classes. Yet, opportunities to make learning visible situated in positive classroom environments are among the most critical factors supporting learning (Hattie, 2012) and creativity (Chan & Yuen, 2014). The willingness to engage in behaviours that reveal how one is processing content and developing skills is critical to deep learning; in

such moments, as learning is revealed, feedback may be given, and new directions issued. Given the implications of risk-taking, and the complexity of fostering its conditions, it is significant to consider what pedagogically nurtures such responses from learners. Yet, little research has focused on this phenomenon in middle school classrooms and less still on how teachers support such conditions while working with culturally and economically diverse populations. Viewing the willingness of learners to engage in risks through a lens of culturally relevant teaching behaviours provides additional significance to consider, particularly tangible acts connected to Brown-Jeffy and Cooper's (2011) principle of equity and excellence: Dispositions, incorporation of multicultural content, equal access, and high expectations (p. 74).

It is well established that classrooms must be safe environments in order for students to learn; the findings of this study do not disrupt this foundational principle but, rather, show how the willingness of learners to engage in risk-taking revealed how secure they felt in these environments in relationships with their teachers. While the findings of our study affirm some of what is known, particularly connections between enhanced risk-taking, positive classroom environment, and teacher–student relationships, this study also highlights the impact of transparent and fair assessment practices upon student willingness to be bold and to show their learning. It was not merely one thing, however, that teachers did to positively encourage learners. What we observed were a set of interconnected teaching practices situated in consistent, culturally relevant learning conditions, and multiple instances in which students demonstrated a willingness to engage in adaptive behaviours that revealed how they were learning and where they needed support.

Ladson-Billings (2014) in a discussion of the evolving nature of culturally relevant pedagogy (CRP) emphasized that the heart of CRP is located within an ability “to link principles of learning with deep understanding of (and appreciation for) culture” (p. 77) and warns of a distortion that can occur when CRP is reduced to “adding some books about people of color, having a classroom Kwanzaa celebration, or posting ‘diverse’ images [to make] one ‘culturally relevant’” (p. 82). In contrast, the participants of our study showed how a deep appreciation of culture working in relationship with elevated academic expectations created conditions in which learners took risks for the purposes of learning. The results of this study contribute to CRP scholarship and complement understandings of how to assess the impact of teacher pedagogy when working with culturally and economically diverse learners.

The majority of North American school systems emphasize the importance of culturally relevant pedagogy (CRP) (Ladson-Billings, 1995, 2014) as part of effective teaching practices at all grade levels. Attending to how teachers implement CRP into daily routines as well as into decisions related to instruction and assessment, proved to be pivotal to our study, as it offered us insights into learner willingness to engage in risks for the purposes of learning. The teacher participants of this study were highly aware of how race, poverty, and historical injustices have intersected to create situations where certain groups are categorized as underachieving. This study has revealed how important academic risk-taking is to culturally relevant pedagogy and related teaching behaviours. When middle school students of culturally and economically diverse backgrounds are willing to take that leap and reveal their learning, it is evidence that they have faith in those who are teaching them.

References

- Allmond, S., Hillman, J., Huntly, K., Makar, K., & O'Brien, M. (2016). Assessing children's progress in taking intellectual risks in a mathematical inquiry classroom with a positive learning approach. In B. White, M. Chinnappan, & S. Trenholm (Eds.), *Opening up mathematics education research (Proceedings of the 39th annual conference of the Mathematics Education Research Group of Australasia)* (pp. 94–101). MERGA.
- Ames, C. (1992). Achievement goals and classroom motivational climate. In J. Meece & D. Schunk (Eds.), *Students' perceptions in the classroom* (pp. 327–348). Erlbaum.
- Arnett, J. J. (1999). Adolescent storm and stress, reconsidered. *American Psychologist*, *54*(5), 317–326.
- Aronson, B., & Laughter, J. (2016). The theory and practice of culturally relevant education: A synthesis of research across content areas. *Review of Educational Research*, *86*(1), 163–206. <https://doi.org/10.3102/0034654315582066>
- Atkins, W. J., Leder, G. C., O'Halloran, P. J., Pollard, G. H., & Taylor, P. (1991). Measuring risk taking. *Educational Studies in Mathematics*, *22*(3), 297–308. <https://www.jstor.org/stable/3482301>
- Beghetto, R. (2009). Correlates of intellectual risk taking in elementary school science. *Journal of Research in Science Teaching*, *46*(2), 210–223.
- Black Learners Advisory Committee. (1994). *BLAC report on education: Volumes 1 to 3*. <https://www.ednet.ns.ca/acs/files-ac/docs/blacreportoneducationvoll1-3.pdf>
- Bransford, J. D., & Donovan, S. M. (2005). Scientific inquiry and how people learn. In S. M. Donovan & J. D. Bransford (Eds.), *How students learn: History, mathematics, and science in the classroom* (pp. 397–420). The National Academies Press.
- Bråten, I., & Strømsø, H. I. (2004). Epistemological beliefs and implicit theories of intelligence as predictors of achievement goals. *Contemporary Educational Psychology*, *29*(4), 371–388.
- Brown-Jeffy, S., & Cooper, J. E. (2011). Toward a conceptual framework of culturally relevant pedagogy: An overview of the conceptual and theoretical literature. *Teacher Education Quarterly*, *38*(1), 65–84.

- Brownell, M. D., Roos, N. P., Fransoo, R., Roos, L., Guevremont, A., MacWilliam, L., Yallop, L., & Levin B. (2006). Is the class half empty? A population-based perspective on socioeconomic status and educational outcomes. *IRPP Choices*, 12(5) 1–30. <https://irpp.org/research-studies/is-the-class-half-empty/>
- Brownell, M. D., Roos, N. P., MacWilliam, L., Leclair, L., Ekuma, O., & Fransoo, R. (2010). Academic and social outcomes for high-risk youths in Manitoba. *Canadian Journal of Education*, 33(4), 804–836. <https://journals.sfu.ca/cje/index.php/cje-rce/article/view/2188>
- Byrnes, J. P., Miller, D., & Schafer, W. (1999). Gender differences in risk taking: A meta-analysis. *Psychological Bulletin*, 125(3), 367–383.
- Çetin, B., İlhan, M., & Yilmax, F. (2014). An investigation of the relationship between the fear of receiving negative criticism and of taking academic risk through canonical correlation analysis. *Educational Sciences: Theory & Practice*, 14(1), 146–158. <https://doi.org/10.12738/estp.2014.1.1616>
- Chan, S., & Yuen, M. (2014). Personal and environmental factors affecting teachers' creativity-fostering practices in Hong Kong. *Thinking Skills and Creativity*, 12, 69–77. <https://doi.org/10.1016/j.tsc.2014.02.003>
- Clifford, M. M. (1991). Risk taking: Theoretical, empirical, and educational considerations. *Educational Psychologist*, 26(3-4), 263–297. https://doi.org/10.1207/s15326985ep2603&4_4
- Clifford, M. M., & Chou, F. (1991). Effects of payoff and task context on academic risk taking. *Journal of Educational Psychology*, 83(4), 499–507.
- Clifford, M. M., Chou, F. C., Mao, K., & Lan, W. Y. (1990). Academic risk taking, development, and external constraint. *Journal of Experimental Education*, 59(1), 45–64. <https://doi.org/10.1080/00220973.1990.10806550>
- Clifford, M. M., Lan, W. Y., Chou, F. C., & Qi, Y. (2014). Academic risk-taking: Developmental and cross-cultural observations. *Journal of Experimental Education*, 57(4), 321–338. <https://doi.org/10.1080/00220973.1989.10806514>
- Crone, E. A., van Duijvenvoorde, A. C. K., & Peper, J. S. (2016). Annual research review: Neural contributions to risk-taking in adolescence—developmental

- changes and individual differences. *Journal of Child Psychology and Psychiatry*, 57(3), 353–368. <https://doi.org/10.1111/jcpp.12502>
- Dachner, A. M., Miguel, R. F., & Patena, R. A. (2017). Risky business: Understanding student intellectual risk taking in management education. *Journal of Management Education*, 41(3), 415–443. <https://doi.org/10.1177/1052562917695775>
- Do, K. T., Guassi Moreira, J. F., & Telzer, E. H. (2017). But is helping you worth the risk? Defining prosocial risk taking in adolescence. *Developmental Cognitive Neuroscience*, 25, 260–271. <https://doi.org/10.1016/j.dcn.2016.11.008>
- Duell, N., & Steinberg, L. (2019). Positive risk taking in adolescence. *Child Development Perspectives*, 13(1), 48–52. <https://doi.org/10.1111/cdep.12310>
- Duell, N., & Steinberg, L. (2020). Differential correlates of positive and negative risk taking in adolescence. *Journal of Youth and Adolescence*, 49, 1162–1178. <https://doi.org/10.1007/s10964-020-01237-7>
- Dupeyrat, C., & Mariné, C. (2005). Implicit theories of intelligence, goal orientation, cognitive engagement, and achievement: A test of Dweck's Model with returning to school adults. *Contemporary Educational Psychology*, 30(1), 43–9. <https://doi.org/10.1016/j.cedpsych.2004.01.007>
- Dweck, C. S. (1999). *Self-theories: Their role in motivation, personality and development*. Taylor & Francis.
- Fang, Z. (2006). The language demands of science reading in middle school. *International Journal of Science Education*, 28(5), 491–520.
- Francois, C. (2013). Reading is about relating: Urban youths give voice to the possibilities for school literacy. *Journal of Adult & Adolescent Literacy*, 57(2), 141–149. <https://doi.org/10.1002/JAAL.218>
- Frank, L. (2015). *End it now: The 2015 report card on child and family poverty in Nova Scotia*. Canadian Centre for Policy Alternatives (CCPA). <https://www.policyalternatives.ca/publications/reports/2015-report-card-child-and-family-poverty-nova-scotia>
- Frank, L., & Fisher, L. (2020). *2019 report card on child and family poverty in Nova Scotia: Three decades lost*. Canadian Centre for Policy

- Alternatives (CCPA). <https://www.policyalternatives.ca/publications/reports/2019-report-card-child-and-family-poverty-nova-scotia>
- Gay, G. (2000). *Culturally responsive teaching: Theory, research, and practice*. Teachers College Press.
- Gee, J. P. (2007). *Social linguistics and literacies: Ideology in discourses* (3rd ed.). Routledge.
- Hattie, J. (2012). *Visible learning for teachers: Maximizing impact on learning*. Routledge.
- Kakembo, P., Ash, P., & Curry, S. (2014, November 14–15). *Baseline data on African Nova Scotian learners. Reflecting on the past, charting the future: A Provincial Education Conference* [Conference presentation]. BLAC Conference, Dartmouth, NS, Canada. <http://dbdli.ca/dbdli-research/baseline-data-on-african-nova-scotian-learners/>
- Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. *American Educational Research Journal*, 32(3), 465–491.
- Ladson-Billings, G. (2014). Culturally relevant pedagogy 2.0: A.k.a. the remix. *Harvard Educational Review*, 84(1), 74–84.
- Lee, E., & Marshall, C. (2009). *Reality check: A review of key program areas in the BLAC report for their effectiveness in enhancing the educational opportunities and achievement of African Nova Scotian learners*. Nova Scotia Department of Education. http://acs.ednet.ns.ca/sites/default/files/REALITY_CHECK_FINAL_REPORT_FOR_WEB.pdf
- Lerner, R. M., Almerigi, J., Theohas, C., & Lerner, J. V. (2015). Positive youth development: View of the issues. *Journal of Early Adolescence*, 25(1), 10–16.
- McKenna, M. C., & Robinson, R. D. (2014). *Teaching through text: Reading and writing in the content areas* (2nd ed.). Pearson.
- Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). Jossey-Bass.
- Mitton, J., & Murray-Orr, A. (2017, May 27–31). *Identifying teaching practices in middle school science and social studies that enhance literacy and learning for African*

- Nova Scotian (ANS), Mi'kmaq, and learners who experience poverty: Preliminary findings* [Conference presentation]. Canadian Society for the Study of Education (CSSE) Annual Conference, Toronto, ON, Canada.
- Monte-Sano, C., De La Paz, S., & Felton, M. (2014). Implementing a disciplinary-literacy curriculum for US history: Learning from expert middle school teachers in diverse classrooms. *Journal of Curriculum Studies*, 46(4), 540–575. <https://doi.org/10.1080/00220272.2014.904444>
- Murray-Orr, A., & Mitton, J. (2019). *Redressing the achievement gap in literacy with vulnerable populations at a vulnerable age*. Nova Scotia Inter-University Research Network. https://www.ednet.ns.ca/sites/default/files/docs/iurn_projects_in_progress.pdf
- Nieto, S. (2002). *Language, culture, and teaching: Critical perspectives for a new century*. Lawrence Erlbaum Associates.
- Nova Scotia Department of Education and Early Childhood Development. (2020). *Inter-University Research Network (IURN)*. <https://www.ednet.ns.ca/ERP/iurn>
- Polikoff, M. S., & Struthers, K. S. (2013). Changes in the cognitive complexity of English instruction: The moderating effects of school and classroom characteristics. *Teachers College Record*, 115(8), 1–26.
- Province of Nova Scotia. (2016). *Individual program plan (IPP) review: Themes and recommendations*. <https://www.ednet.ns.ca/documents/add-file-individualprogramplanreviewpdf>
- Robinson, L. E. (2012). *Academic risk-taking in an online environment* (Publication no. 3510506) [Doctoral dissertation, University of Connecticut]. ProQuest Dissertations & Theses.
- Rohrmann, B. (2005). *Risk attitude scales: Concepts, questionnaires, utilizations*. University of Melbourne/Australia. <http://www.rohrmannresearch.net/pdfs/rohrmann-racreport.pdf>
- Roos, N. P., Brownell, M., Guevremont, A., Fransoo, R., Levin, B., MacWilliam, L., & Roos, L. L. (2006). The complete story: A population-based perspective on school performance and educational testing. *Canadian Journal of Education/*

- Revue canadienne de l'éducation*, 29(3), 684–705. https://www.jstor.org/stable/20054191?seq=1#metadata_info_tab_contents
- Saldaña, J. (2013). *The coding manual for qualitative researchers* (2nd ed.). Sage.
- Sharma, S. (2015). Promoting math taking in mathematics classrooms: The importance of creating a safe learning environment. *The Mathematics Enthusiast*, 12(1), 290–306. <http://scholarworks.umt.edu/tme/vol12/iss1/24>
- Silverman, M. H., Jedd, K., & Luciana, M. (2015). Neural networks involved in adolescent reward processing: An activation likelihood estimation meta-analysis of functional neuroimaging studies. *NeuroImage*, 122, 427–439. <https://doi.org/10.1016/j.neuroimage.2015.07.083>
- Smail, A., & Kucan, L. (2020). Implementing an enriched language development program for learning support students. *Journal of Practitioner Research*, 5(1), 1–29. <https://doi.org/10.5038/2164-0866.5.1.1128>
- Statistics Canada. (2019). *Canadian income survey, 2019*. The Daily. <https://www150.statcan.gc.ca/n1/daily-quotidien/190226/dq190226b-eng.htm>
- Tan, E. W. S., Lim, S. W. H., & Manalo, E. (2016). Global-local processing impacts academic risk taking. *The Quarterly Journal of Experimental Psychology*, 70(12), 2434–2444. <https://doi.org/10.1080/17470218.2016.1240815>
- Teagarden, A., Commer, C., Cooke, A., & Mando, J. (2018). Intellectual risk taking in the writing classroom: Navigating tensions in educational values and classroom practice. *Composition Studies*, 46(2), 116–136.
- Telzer, E. H., Fuligni, A. J., Lieberman, M. D., & Gálvan, A. (2014). Neural sensitivity to eudaimonic and hedonic rewards differentially predict adolescent depressive symptoms over time. *Proceedings of the National Academy of Sciences of the United States of America*, 111, 6600–6605. <https://doi.org/10.1073/pnas.1323014111>
- Telzer, E. H. (2016). Dopaminergic reward sensitivity can promote adolescent health: A new perspective in the mechanism of central striatum activation. *Developmental Cognitive Neuroscience*, 17, 57–67.

- The Canadian Press. (2017, February 21). Nova Scotia passes bill ending teachers' contract dispute. *Maclean's*. <http://www.macleans.ca/news/canada/nova-scotia-passes-bill-ending-teachers-contract-dispute/>
- Thiessen, V. (2009). *Identity, equity, and performance: Mathematics and reading literacy in Nova Scotian public schools*. Nova Scotia Department of Education. <http://www.rdc-cdr.ca/identity-equity-and-performance-mathematics-and-reading-literacy-nova-scotia-public-schools>
- Varişoğlu, B., & Çelikpazu, E. E. (2019). Secondary school students' academic risk-taking levels in Turkish lesson. *International Journal of Progressive Education*, 15(4), 241–258. <https://doi.org/10.29329/ijpe.2019.203.18>
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Sage.
- Yin, R. K., & Davis, D. (2007). Adding new dimensions to case study evaluations: The case of evaluating comprehensive reforms. *New Directions for Evaluation*, 113, 75–93. <https://doi.org/10.1002/ev.216>