BU Journal of Graduate Studies in Education

Volume 17, Issue 1, 2025

Wild Turkeys on the Prairie

BRANDON UNIVERSITY

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BU Journal of Graduate Studies in Education

Volume 17, Issue 1, 2025

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INTRODUCTION

Welcome to the thirty-ninth issue of the *BU Journal of Graduate Studies in Education*, devoted to rural, northern, and Indigenous education. Our authors for volume 17 are current and past BU Faculty of Education graduate students. I thank these educators for sharing their professional expertise.

- Marlo Kozak's refereed article explores trauma in schools and shares ways to support both teachers and students.
- Meaghan Casemore's refereed article discusses early childhood interventions, classroom interventions, and school reforms as means to reduce academic achievement gaps.
- Gailene Glanfield's refereed article holds governments and educational institutions responsible for removing core barriers to incorporating Indigenous ways of knowing into secondary school mathematics.
- Nathan Strange's refereed article argues against total cell phone bans in schools, and offers alternatives such as a balanced cell phone policy with designated usage times and clear guidelines.
- Cara Butler's refereed article articulates how Multi-Tiered Systems of Support (MTSS) can improve student academics and behaviour in inclusive classrooms.
- Martyna Figueiredo's refereed article examines the barriers and potential solutions to providing risky play opportunities for children in school.
- Coreen Johnston's refereed article confirms causal factors related to teacher attrition, and considers multifaceted resolution strategies.
- Jalynn Albrecht's refereed article clarifies the connection between teachers' and students' mental health and well-being, and summons governments, communities, schools, and individuals to support teachers' wellness.
- Jiake He's opinion paper summarizes the challenges that international students experience as they seek meaningful employment in Canada.

Also included in this issue is our "Celebration of Scholarship," to honour graduate students who completed their M.Ed. degrees with theses in 2024.

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Building Resilience: Solutions To Address Trauma in Schools

Marlo Kozak

Abstract

Trauma significantly impacts students and educators, affecting learning, behaviour, and well-being. However, trauma-informed practices can promote resilience through school-wide strategies such as routines, SEL programs, and secure attachments. Classroom-specific approaches can support regulation and skill development by building emotional vocabulary and fostering empathy. Targeted interventions such as animal-assisted programs address greater needs. Supporting educators with professional development and debriefing opportunities reduces burnout and sustains these practices. By fostering safe, supportive environments, trauma-informed approaches can mitigate trauma's effects, enhancing academic and emotional success.

The impact of trauma in schools is becoming increasingly widespread. Recent studies indicate that many children come to school with a trauma background (Chafouleas et al., 2019). Students whose brains are impacted by trauma often struggle academically and exhibit social-emotional problems and aggression at school (Hauser, 2021). Furthermore, the dysregulation of trauma-affected students has a considerable impact on teachers. Schools, as a central environment in students' lives, are uniquely positioned to support students affected by trauma, and are the most common setting for the delivery of both universal and targeted interventions (Chafouleas et al., 2019) to promote academic and emotional well-being.

Understanding the Impact of Trauma in Schools

Trauma profoundly impacts the brain's development and functioning (Davis et al., 2020). Students affected by trauma struggle with attention, memory, and learning. Additionally, trauma disrupts emotional regulation, making it difficult for students to manage stress and behaviour in the classroom (Burdick et al., 2021). Furthermore, the impact of trauma extends beyond the students themselves and impacts the teachers who work with them. Educators may experience burnout, stress, and emotional fatigue as they navigate the challenges of supporting students with trauma histories (Jennings et al., 2019). Addressing these interconnected issues requires a comprehensive trauma-informed approach that supports both students and teachers in creating a healthier, more effective learning environment.

Impact on the Brain

Trauma can lead to changes in the brain's structure and function (Davis et al., 2020), and consequently has a negative impact on school performance. One example of impacted brain function is difficulty with executive functioning, a set of cognitive processes that enables students to plan, focus attention, remember instructions, and perform multiple tasks successfully. School readiness and academic success therefore depend on a student's executive functioning skills (Hauser, 2021). Given that the brain has heightened plasticity during critical developmental periods, early experiences that support neural rewiring and the development of positive coping strategies are essential for building skills crucial to school success.

Impact on Academic Success and Regulation

The impact of trauma-affected students in the school system is significant. Children who have experienced early life adversity, or ongoing adverse experiences, often struggle academically and display social emotional challenges, including aggression at school (Hauser, 2021). Research shows that students impacted by trauma experience less instructional time, lower academic performance, higher rates of absenteeism, suspensions, and expulsions, and are more likely to have an IEP for learning or behaviour (Garcia et al., 2023). Kindergarten students with three or more Adverse Childhood Experiences (ACEs) have scored below average in language, literacy, and math, and displayed more significant attentional, social, and aggression issues, further highlighting how childhood adversity affects the developing brain (Hauser, 2021). Additionally, students whose brains have been impacted by trauma often struggle to differentiate between emotional and physical threats (Hauser, 2021). For example, if a student with a history of trauma experiences name-calling, this might trigger a fear response that can lead to bolting, aggression, and significant dysregulation Supporting trauma-affected students requires a compassionate, proactive approach that addresses their unique academic and emotional needs.

Impact on Teachers

The dysregulation displayed by trauma-affected students has a considerable impact on teachers. Students affected by trauma can drain teachers' energy and cause a low sense of self-efficacy. When providing support to trauma-affected students, teachers report that they are uncertain how best to help students despite receiving trauma training (Mayor, 2021). Teachers are also at risk for secondary traumatic stress, given that they often learn about student trauma through daily interactions (Davis et al., 2020). Students with trauma can display emotional numbing or detachment and share shocking details with little emotion, which can be disturbing for teachers (Mayor, 2021). Providing continuous emotional support and resources for teachers is essential to help them effectively support trauma-affected students while preserving their own well-being and resilience in the classroom.

Solutions To Address Trauma in Schools

Schools play a key role in shaping students' social, emotional, and academic development, but trauma often creates barriers to learning. Trauma-informed practices offer a framework for addressing these challenges, fostering environments that promote safety, resilience, and connection. A compassionate approach that implements school-wide guidelines helps to establish safe spaces for students to thrive (Melito-Conners, 2024). Teachers also play a critical role by prioritizing universal classroom practices that support high-impact learning, emotional regulation, secure attachments, strength-based approaches, and replacement of consequences with direct teaching of skills that support regulation (Burdick & Corr, 2021). Finally, a trauma-informed framework must consider teacher support. By adopting trauma-sensitive strategies and supporting both students and teachers, schools can create environments that mitigate trauma’s impact on academic and social-emotional success.

Universal School-Wide Guidelines

Implementing a school-wide trauma-informed approach means creating a consistent framework that acknowledges the effects of trauma on student behaviour, recognizes trauma symptoms in the classroom, and responds with trauma-sensitive practices (Phifer & Hull, 2016). School leaders can align school plans with universal practices, such as the use of common language (Melito-Conners, 2024), consistent school-wide expectations, and routines that foster

a sense of safety for students and reduce stress by creating predictability. In my workplace, we use classroom treaties across all grade levels from kindergarten to grade five, to help students recognize the format and teachings as they progress from grade to grade each year. Our school follows The Circle of Courage, a foundational model to establish common language around core values, helping students internalize the principles of Belonging, Mastery, Independence, and Generosity (Van Bockern, 2018). In doing so, we create a cohesive learning environment that supports students' growth and development, both academically and socially, at every stage of their educational journey.

Social-Emotional Learning (SEL) programs can play a vital role in creating a safe and supportive school environment, particularly for students affected by trauma. SEL programs promote positive personal, social, and emotional skills through direct teaching (Bergin et al., 2023). By fostering emotional awareness and resilience, SEL programs help trauma-affected students better navigate the school experience. Additionally, SEL programs support trauma-informed practices by increasing teachers' awareness of trauma and its effects on behaviour, making them more likely to respond with empathy and understanding, rather than misinterpreting behaviours as defiant or willful (Honsinger et al., 2019). Research shows that SEL programs increase social competence and academic success even when the program does not directly include academic content (Bergin et al., 2023). SEL programs not only enhance individual resilience but also contribute to a more compassionate and effective learning environment for all students.

Universal Classroom Practices

Safe and caring classrooms that implement universal trauma-informed practices are fundamental in supporting trauma-affected students (Burdick & Corr, 2021), particularly because teachers cannot always identify which students have experienced trauma (Honsinger et al., 2019). Universal practices support both trauma-affected students and the entire class by fostering emotional regulation and creating a safe environment. Strategies such as deep breathing, designated breaks, calming spaces, and labeling emotions can significantly aid emotional regulation. Programs that teach students to label feelings and use techniques such as mirrors to recognize emotions are effective. Additionally, promoting shared responsibility through cooperative classroom activities, such as keeping a beach ball in the air without speaking, fosters teamwork and emotional growth (Van der Kolk, 2014). Incorporating universal trauma-informed practices not only supports trauma-affected students but also cultivates a nurturing classroom environment that benefits all students.

Teachers play a crucial role in creating safe, supportive classrooms by using strategies that promote emotional regulation and help trauma-affected students develop emotional awareness (Burdick & Corr, 2021). Body language can be an unintentional trigger for trauma-affected students. Since trauma-affected students often notice nonverbal cues, teachers should be mindful of body language, eye-contact, and tone of voice. Using words to describe feelings and emotions is an important skill for trauma-affected students, so it is important to build a child’s emotional vocabulary. Teachers can model emotional vocabulary by describing their own feelings. For example, a teacher might tell the class that she feels frustrated because her stapler is broken, thereby demonstrating how words can describe emotions. Additionally, regular check-ins with trusted adults can help students build emotional vocabulary and regulate their emotions throughout the day (Melito-Connors, 2024).

Classroom management is critical for maintaining emotional regulation in school. A consistent, structured environment based on trust promotes emotional regulation, while inconsistency or overly strict behaviour can cause dysregulation (Smith & Lambert, 2008). External reward systems such as behaviour charts are ineffective in teaching students the skills needed to change behaviour and may inadvertently escalate student behaviour if the student feels a perceived threat. Instead, teaching skills and coping strategies helps to maintain trust

and emotional regulation (Burdick & Corr, 2021). A shift from a deficit-based mindset to a growth mindset is paramount to a student affected by trauma. Instead of assuming there is something wrong with a dysregulated child, it is more helpful to focus on what happened to the dysregulated child (Perry & Winfrey 2021). This shift helps to create a supportive community wherein students feel understood and empowered to thrive (Honsinger et al., 2019).

Secure attachments are essential for a child to regulate and be ready to learn. Teachers must first establish a connection with students before guiding them in completing tasks (Burdick & Corr, 2021). Daily practices that include greeting students by name, fostering a calm and welcoming atmosphere, and offering unconditional acceptance, particularly when students are dysregulated, are foundational. Supportive relationships with teachers and peers help students to develop resilience, even in the face of adversity (Jennings, 2019). The 2 x 10 strategy, in which a teacher spends two minutes each day with a student for ten consecutive days, is an effective way to build these connections (Honsinger et al., 2019). Conversely, removing students from the classroom can reinforce feelings of exclusion, signaling that they do not belong in the learning environment. A calm, consistent adult can regulate a child's nervous system, while unpredictable adults may leave students with an overactive alarm system, resulting in anxiety and reluctance to take risks (Van der Kolk, 2014). A key regulatory strategy is to invite students to share in our calm rather than becoming entwined in their chaos (Honsinger, 2019). By fostering secure attachments and providing consistent, supportive relationships, educators can create an environment wherein students feel valued, regulated, and ready to thrive academically and emotionally.

Targeted Interventions

Universal strategies are a foundational practice in trauma-sensitive schools. In addition, some students may require targeted interventions to address specific trauma-related needs. Our school plan incorporates the Pyramid of Inclusive Support (Pembina Trails, 2022), which outlines three flexible levels of support: universal, targeted, and intensive. This leveled approach to service delivery provides trauma-informed practices to all students, and more intensive and individualized support to those students who need it (Phifer & Hull, 2016). These trauma-sensitive practices can significantly reduce the re-traumatization that may arise from punitive and consequence-driven behaviour management systems, including office referrals, public humiliation, loss of privileges such as recess, or the removal of points in a classroom reward system (Honsinger et al., 2019).

Helping students with a history of trauma sometimes requires targeted interventions that address both emotional regulation and skill development in a supportive, nonjudgmental environment. Since processing emotions through language can be difficult for students with a history of trauma, introducing animals can provide a nonverbal approach to help these students process their emotions (Van der Kolk, 2014). In Pembina Trails School Division, we support the Horse Connections program for teens who struggle in school due to a trauma history. The calm and responsive nature of horses help students become more aware of their bodies and emotions and thus support emotional regulation. See Spot Read uses dog ambassadors to assist younger students who struggle with reading (Van der Kolk, 2014). Developing a relationship with their reading partner dogs helps to reduce anxiety for students who are nervous about reading aloud. Targeted interventions that incorporate animals can provide trauma-affected students with unique opportunities to develop emotional regulation and essential skills in a supportive, nonjudgmental environment.

Mitigating Teacher Burnout

The increasing number of trauma-affected students in classrooms has contributed to a rise in teacher burnout, with depersonalization as a common sign. This occurs when teachers begin

to view student behaviour as intentional, rather than a lack of skills or difficulties with emotional regulation (Jennings, 2019). It is important for educators to understand that trauma is a common experience for many students and that behaviour often serves as a form of communication (Honsinger, 2019). Teachers who recognize the root causes of trauma are better equipped to approach student behaviour with empathy, teaching specific skills rather than resorting to punitive measures. This shift in perspective not only supports students' emotional growth but also helps to alleviate the strain on teachers, fostering a more sustainable and supportive learning environment. To prevent teacher burnout, teachers should have opportunities to debrief their classroom experiences in a judgment-free environment (Jennings, 2019), which may include meeting with a school social worker or psychologist. Addressing teacher burnout requires a school-wide commitment to trauma-informed practices that support both students and educators.

Final Thoughts on Trauma-Informed Practices in Schools

The high prevalence of student trauma underscores the need for schools to understand its impact on development (Maddox et al., 2022). Mental health diagnoses now surpass those of physical illness and injury for the first time in more than fifty years (Katz et al., 2018). Trauma, which can occur at any life stage, has significant effects on brain structure and function, making early intervention critical (Davis et al., 2020). Trauma disrupts learning, behaviour, and teacher efficacy, but school-wide trauma-informed approaches and classroom strategies can promote emotional regulation, secure attachments, and high-impact learning (Burdick & Corr, 2021). Targeted interventions may also be needed for individual students. Furthermore, to prevent teacher burnout, schools must provide ongoing support for educators. By integrating trauma-informed practices and supporting both students and teachers, schools can foster environments that promote resilience, academic success, and well-being.

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Marlo Kozak is a K-5 school principal in Winnipeg with a background in student services, focused on inclusive learning. Pursuing a Master of Education in educational administration at Brandon University, she aims to enhance her leadership skills. Marlo is also a mom and nature enthusiast who enjoys outdoor adventures with her husky.

Close the Achievement Gap

Meagan Casemore

Abstract

Achievement gaps observed in classrooms harshly affect low socio-economic students. Early childhood interventions, classroom interventions, and school reforms can help to close these gaps. Intervening before schooling begins by increasing parental education, access to affordable quality childcare, accessible preschool programs that encourage family engagement, and full-time kindergarten are most effective. Once school begins, funding, preparation time, and teacher PD on EAL methods are necessary to provide effective classroom interventions. Schools can close gaps that began prior to entry with support from the community. Successful school reforms have taken place in Houston, New York, Boston, and Michigan requiring policy changes and government support. When all community members and agencies view closing achievement gaps as paramount to societal success, achievement gaps can be closed.

If every person worldwide could receive a high school diploma, the global poverty level would be reduced by more than half (Earth Management TV, 2022). This seems so simple yet would have a monumental impact on the world. Although there has been an increase of global participation in elementary school (Rad et al., 2022), even Canada cannot seem to perfect secondary student retention, with high school dropout rates of 7-13%. When looking strictly at the most vulnerable communities, the dropout rate increases to 30-50% in Canada (Unifor, n.d.). There are many reasons that children may not complete high school, from being required to work to support themselves or their families, to addictions, to being so far behind their peers in academics that school becomes just too hard. This final reason is labelled as the achievement gap. Many high school dropouts have cited an achievement gap as being a large part of the reason they felt they could not complete school (Long, 2017). Diminishing this gap would reduce high school dropout rates.

Researchers have found that the achievement gap already impacts children, primarily of low socio-economic status, before elementary school even begins (Dumont & Ready, 2020). The achievement gap phenomenon has primarily been studied within the context of the United States (Sandsor et al., 2023). This means the current research does not take into consideration the impact of social programs, such as universal health care, that are implemented in Canada but not in the United States. Nevertheless, there are enough similarities to extrapolate many research findings to Canadian classrooms. Two recommended ways to close the achievement gap are early childhood interventions (Manning & Kovach, 2003) and classroom interventions (Rad et al., 2022). Educators need to look at what these interventions would entail, how we can successfully intervene one classroom at a time, and the efficacy of whole-school reform.

Early Childhood Interventions

All children have an innate ability to learn (Rad et al., 2022); however, many children already have an achievement gap before entering kindergarten (Schultz, 2024). This gap is largely attributed to a child's socio-economic status (European Commission, 2022), which affects the child's future academic success before birth (Von Hippel et al., 2018). Socio-economic factors that contribute to a child's academic achievements include household income, race, number of family members at home (adults and children), and educational level of the adult influencers in the child's life. Some ways to combat the preexisting achievement gap and the impacts of socio-economic status at home are to increase parental academic achievement and provide more access to quality and affordable childcare facilities, quality preschool programs, and all-day, every-day kindergarten. There will be the largest impact on closing the

achievement gap if interventions are put in place to reduce it before formal education even begins (Von Hippel et al., 2018); unfortunately, this is also the time when familial influence is the strongest and educators and other outside agencies have the least control over the variables.

Parents' academic achievement level and household income have the biggest impact on the academic achievements of their children (Schultz, 2024). Parental attitudes toward school in general, and their ability to prepare and support their children to become successful students, are very important (European Commission, 2022). After all, the vulnerable parents of today were often the vulnerable children of the previous generation. Investing government funds into free education for new parents, whether with a GED or a workforce training diploma, or both (Schultz, 2024), could improve the chances of their children's academic success in several ways. The parents involved would most likely have a better final experience with school, giving them a more positive attitude and greater ability to support their children's studies. It could increase their earning potential and give them more time at home with their children. On top of all the positives for their children's academics, it would pay the investment back by removing or reducing their need for public assistance programs (Schultz, 2024), and breaking barriers around systemic poverty (Rad et al., 2022). If preventions are not put in place, the vulnerable children of today will become the vulnerable parents tomorrow.

Quality and affordable childcare is essential to promoting success later in life (Schultz, 2024). Children's early years are when their families make the most impact on their lives (Von Hippel et al., 2018), unless the family is required to work long hours or multiple jobs to make ends meet. In this circumstance, families need to rely on daycares. Unfortunately, high quality childcare is expensive, and lower income families may be unable to afford it, if there are any spaces available (Rad et al., 2022). My youngest children have been on a wait list to a local quality daycare facility for four and a half years and are unlikely to get in until they have aged out of the facility. The academic concerns caused by socio-economic status are exacerbated when quality childcare is inaccessible (Rad et al., 2022). To get the most educational support out of a childcare facility, the program creator should be well educated, potentially a teacher, to prepare children whose homes do not provide the skills necessary to be successful in school. Unfortunately, this would increase the costs to run an already expensive service.

Children's brains grow most rapidly before the age of two, enabling them to learn quickly from their environment (Von Hippel et al., 2018). Infants require socialization and age-appropriate education to begin life on a level playing field with their socialized peers (Rad et al., 2022). These social and emotional skills will impact their academic success throughout their entire time at school, and their mental and physical health and well-being. Childcare provided to low-income families, specifically, must teach children coping skills and how to maintain a positive attitude (Rad et al., 2022), because tenacity will be imperative to their success.

A year or more in a quality preschool program is another way to close the achievement gap before children attend formal schooling, especially for society's most vulnerable (Manning & Kovach, 2003). Investing in vulnerable children has the greatest return on investment of any money a government can spend (Rad et al., 2022). It is possible (and likely probable) that two children who grow up in very similar socio-economic climates in terms of race, gender, family income, etc., could have very different learning environments outside of school (Von Hippel et al., 2018). This makes it imperative to offer quality interventions to the entire population, rather than those who are assumed to fit within a vulnerable status. One key to providing quality schooling at such a young age is family engagement in the programming. This engagement fosters understanding between teachers and the families they serve (Rad et al., 2022). This is also incredibly hard to achieve, because the methods need to be convenient and empathetic.

My children currently attend a preschool program run by the local school division. This is a taxpayer funded program, run by a qualified teacher and an educational assistant. The quality of the educator is fundamental in running a program that is successful at closing the achievement gap (Rad et al., 2022). Unfortunately, there are very few children selected for these programs (out of the ~11,000 community population, there are four classes totalling 56 students

altogether), so over half the applications for these programs are declined each year. On top of this, the school division does not let preschool students ride the bus with their older siblings attending the same school. The preschool program requires parental drop off in the morning and pick up shortly before lunch. There is no public transportation in the community, so children cannot attend unless their parents work at a job with flexible hours, have local family to support, or have access to a vehicle. Attending family engagement days, which usually take place on a Friday during the standard workday, is generally considered prerequisite to program acceptance. The restrictive pickup and drop off times, and compulsory family engagement sessions, make the quality preschool program off limits to many families. Investments in education that are inaccessible to the vulnerable members of society do not close the achievement gap, but instead broaden it (Rad et al., 2022). Intervention programs need to be empathetic to the needs and setbacks of their clientele.

The last line of defence to close the gap before it begins is all-day, every-day kindergarten. When kindergarten has half the school hours of numbered grades, the achievement gap is already reduced by 20% prior to the end of grade one (Von Hippel et al., 2018, p. 334). This reduction occurs because kindergarten curricula is designed to expose disadvantaged children to concepts their more privileged peers have already experienced (Dumont & Ready, 2020). Children who are academically weak when they enter school learn more at a much faster rate, since their more advanced peers have mastered many of the concepts being taught before entering school (Von Hippel et al., 2018). Children who attend schools in a low socio-economic or high minority region are often already afforded the opportunity to attend full-day kindergarten (Dumont & Ready, 2020). Because no two children are alike, including their support networks, it is imperative there is no segregation between children we stereotype into the lower end of the achievement gap and those we feel should thrive on their own. If we offer interventions only in regions of stereotypically low achievers, we will miss helping many children who do not attend stereotypically low achieving schools but also fit into the high-risk category, or who are surprisingly high-risk despite meeting low-risk markers. To combat these stereotypes, every child should be afforded the opportunity to attend full-day kindergarten.

Although parents cannot be forced to select an early childhood program for their children, it is best if program offerings are as convenient as possible for parents of all walks of life in hopes that they choose one for their children. If intervening early reduces the gap before children enter formal schooling by even a few percentage points, it is worth it. If more children view themselves as successful right from the beginning of their education, continuing through to graduation, and even potentially attending a post-secondary institution, it is worth it. The gap between social classes and family wealth has been steadily growing since 1970 (Von Hippel et al., 2018). Education is a tangible way to ensure a successful adulthood for all.

Classroom Interventions

Despite attempts to equalize students in kindergarten, an achievement gap still exists beyond this and requires school interventions (Von Hippel et al., 2018). Schools are set up to have all students learn at the same rate (Dumont & Ready, 2020), and schools group children by age in hopes that their developmental needs are the same. Student advancements in learning remain relatively consistent across various levels of SES through the school year, but the gaps present continue to grow in the summer because some students continue their learning journey while not in school and others regress (Dumont & Ready, 2020). Currently, school systems do not have an effective resolution to this growing gap in same-grade peers.

Educational institutions try to keep class sizes as equitable as possible to have a similar teacher-to-student ratio, and even though some teachers are more experienced and effective than others, on average teacher differences account for only one percentile added to the gap (Von Hippel et al., 2018). Schools tend to provide more resource funding for struggling students, and teachers regularly spend more time and energy working with the lower achievers in the

classroom (Dumont & Ready, 2020). However, any achievement gap present by the end of kindergarten will not change very much throughout the child's subsequent years in school and is an unfortunate predictor of dropout rates in high school (Manning & Kovach, 2003). Without school interventions, the achievement gap can even increase in the years following kindergarten due to more involved families continuing to encourage learning over the summer break and less involved families' inability to be at home or support learning, causing a regression in skills already learned (Von Hippel et al., 2018). Occasionally, traumatic events or crises will arise and pull a child out of school, or shut down schools altogether, increasing the learning gap for one or more students at a time (Rad et al., 2022). Although small-scale interventions that happen with one teacher, for one year, will not have the same impact as a broad, whole-school approach, there are some things that can be easily implemented right in a classroom. Two of these are vocabulary interventions and simply being aware of any biases held by the teacher.

The most recent widespread traumatic event was the COVID-19 pandemic whereby schools around the world were shut down, or learning went virtual, for an extended length of time. This was devastating to many children, with 100 million additional children worldwide coming back from their time away now reading below grade level (Rad et al., 2022). Some families were able to adapt to the sudden and prolonged interruption of school, but many families were not (European Commission, 2022). This disruption was felt most keenly by children whose families fell in the lowest socio-economic status range (European Commission, 2022). The effects are still being felt today, four years after the event, and so now it is more important than ever to intervene within the school system.

Vocabulary is one area that receives a lot of attention when referring to the achievement gap. Teachers are constantly advising students to read every day so that they will encounter more words and increase their vocabulary. A high vocabulary creates added background knowledge to build on (Manning & Kovach, 2003). Children from high socio-economic backgrounds have 50% more working vocabulary by the end of grade one than children from lower socio-economic backgrounds (Marzano, 2003, p. 52). A vocabulary study done in 1941 found a 6000-word vocabulary gap between children in the 25th percentile and children in the 50th percentile (Marzano, 2003, p. 51). These students fall within the average range; they are not even the extreme outliers. As much notoriety as reading gets for being responsible for the achievement gap, the practice underperforms when increasing working vocabulary. A word needs to be encountered six different times while reading to become a part of one's working vocabulary, but 90% of the words in children's literature are encountered less than once in a million (Marzano, 2003, p. 55). A child would have to read a lot of books to get those six encounters. Even lists of common words that teachers regularly use to teach children vocabulary are not words they will require when reading academic texts, so will not be a huge asset when attempting to comprehend their studies. Thus, if reading alone is not effective enough to increase vocabulary, additional vocabulary supports need to be provided.

It is highly beneficial to directly teach vocabulary that will be encountered in each lesson. Even a quick read over of the vocabulary with definitions increases the retention of a reading passage by 33% (Marzano, 2003, p. 56). When children form images in their head while they read, it adds 34% to their vocabulary retention (Marzano, 2003, pp. 55-56). I have a vocabulary center in every subject in my classroom (yes, even math), where with each lesson the students are assigned a vocabulary word they need a deep grasp on to comprehend the subject matter. The students are given the same paper, no matter the subject or the word, so that familiarization with the task does not hold the child back from completing the vocabulary paper. The page has four boxes. In the first box the children are required to define the word. If they cannot define it in their own words from memory (since I have already taught any word I assign), they can look up the dictionary definition and put this in their own words. In the second box they have to represent the word with a picture. In the third box they have to give examples of the word, and in the fourth box they give nonexamples. This method was shared with me by an English as an Additional Language (EAL) expert, but works well with any child (L. Rowley, personal

communication, October 2019). It helps to close the gap in students for whom the word is a new concept, and it encourages a deeper understanding for students who already know the word on a surface level. Mid-continent Research for Education and Learning has created a list of such words to pre-teach sorted by grade (K-12) based on subject matter they will encounter in school (Marzano, 2003). If the terminology being used sounds more like gibberish, a child will never form a deep connection with the content.

Humans have biases. It is how the brain works. Often the biases are unconscious, such as when we assume a male has a higher position than a female in an office or a specific role in society based on an ethnic surname or accent (Jana & Mejias, 2018). Teachers have biases, too. Schools with low-income, high minority populations are more likely to experience lower than the national average for grades, and they experience three to five times the dropout rate of the national average (Unifor, n.d.). It is the general belief that all students are capable of learning (Rad et al., 2022), so it is necessary to discover why children attending these schools, and living in these demographics, achieve less academic success than children from higher socio-economic neighbourhoods and classrooms (Dumont & Ready, 2020). Children attending a low-income, inner-city schools are not being treated the same way that children are treated in more affluent suburban schools (Rad et al., 2022). People often expect that they will be weaker, and treat them accordingly (Von Hippel et al., 2018). Teachers need to be aware of their own biases and fight bias within themselves, before they can be the teacher these students need (Williams, 2003). After all, self-reflection is an important part of any healthy individual, and all humans are capable of greatness when given the conditions to thrive.

Biases are not restricted to schools in high-risk neighbourhoods; there are staff in all schools whose biases impact the students in their schools. I taught with a colleague who, upon getting a new student in class, came into the staff room and stated how they felt scared when the child's mother entered the school. This child was of the Muslim faith and the mother wore coverings, but this teacher was white. Knowing the child is of the same faith and belief system as the mother, whom the teacher feared based on religion, it appears improbable that this teacher could treat the child equitably to the other children in the class. Children have a right to be given the opportunity to succeed, which requires a sense of belonging and safety (Rad et al., 2022). If it is believed that a child is incapable of greatness, they will surely meet these expectations (Von Hippel et al., 2018). A teacher's attitudes and belief systems have a huge impact on students' abilities to learn. Teachers who truly believe that all students are capable of success have higher achieving students (Zeichner, 2003). Teachers must also believe in their own impact on a student's success. Teachers put their all into their teaching when they believe they are responsible for who succeeds and who does not within their classroom. Everyone must take the time to self-reflect before walking in that door.

Cultural biases tend to be more prevalent when referring to children of a background different to one's own (Zeichner, 2003), so it is imperative that educational systems implement policies that work to counteract any difference in beliefs (Rad et al., 2018, p. 4). Low-income schools tend to have larger populations to draw from, increasing the class size exponentially (Dumont & Ready, 2020, p. 743). The budgets they are given to work with may not increase comparatively, and in many cases these schools receive less funding due to lower taxation in the area (Von Hippel et al., 2018). Even when they receive supplemental funding, schools in a low-income neighbourhood often have less experienced teachers delivering the lessons and interventions, with the average seniority being less than one year in the classroom (Schultz, 2024). Schools must be funded adequately to provide high quality, experienced teachers preferably of similar racial profile to the students, who use culturally responsive, quality resources while holding students to high expectations (Manning & Kovach, 2003). This combination is the fundamental basis of a successful school environment.

Individual classroom interventions are important for closing, or at the very least not exacerbating, the achievement gap. One teacher in one year cannot possibly close the gap entirely. The students at the bottom of the gap are working hard to catch up, but it becomes a

moving target because the higher-level students are also learning and moving their marker up throughout that same time frame. Vocabulary increases will help, but they must be continued in the subsequent grades because each year there are more terms used in their lessons, assignments, and literature. One teacher's effectiveness could be counteracted the next year by a different teacher who has additional biases, fewer interventions, and an overall less effective teaching strategy. It is necessary to make changes that go above and beyond a few ambitious educators and put the pressure onto the administration, school divisions, and government policy makers. With achievement gaps being bigger than ever due to the fall-out effects of COVID-19, it is more important than ever to implement large-scale changes today.

School Reforms

Individual classrooms and teachers are an important factor in closing the achievement gap, but this cannot be the only factor. Putting all the pressure on individual teachers to fix a problem that began before students even came into the school, let alone their classroom, is causing high rates of teacher burn out, leading to high turnover rates, inexperienced teachers, and teacher shortages, which compounds the problem (Schultz, 2024). There have been several successful instances when policies were put into effect to reduce the achievement gap radically within impacted schools (Manning & Kovach, 2003). None of these originate in a lone classroom and rarely an individual school. The changes that have had the biggest impact were district or even government policy changes when policymakers took the time to understand the requirements necessary to meet the diverse needs of the population they served (Williams, 2023). In most cases, ensuring the students' success became a community concern, involving families and outside agencies, taking the pressure off individual teachers (Manning & Kovach, 2003). These large-scale policy reforms helped to prevent teacher burn out while increasing high school retention and decreasing the achievement gap in Houston Independent School District, the Knowledge Is Power Program, Harlem Children's Zone, Boston Public Schools, the Roma Teaching Assistant Program, and Michigan State.

No two examples of successful policy implementation will look exactly alike, because no two groups of children are the same. Policy makers need to look at the specific demographic of the students they are serving, and to the community and parents for support. Curriculum needs are an important aspect of these policies, but true change cannot be done using curriculum alone. It must include ongoing supports for teachers, enabling them to become experts by offering engaging professional development (PD), and by using the same excellent resource for a prolonged period rather than changing tools every few years (Manning & Kovach, 2003). In order to understand fully what the needs are in classrooms, teacher voices must be heard.

Between the years of 1994-2000, Houston Independent School District examined their levels of achievement (Manning & Kovach, 2003). Upon realizing that almost half of the schools in their district were considered under-achieving, they took up the long, arduous task of implementing change. The district did not look at one score, one classroom, or one teacher, but instead decided on areas of improvement for the entire district while providing incentives to achieving their new goals. This district focused its efforts on reducing dropout rates and increasing student attendance. To do this, it linked teachers to their individual success rates, offered cash bonuses to principals who were successful at meeting their goals, and gave extra assistance to the lowest performing schools. It put supports in place to assist teachers in creating effective lesson plans, provided additional PD, increased resource budgets, and listened to what teachers felt they needed. The district added collaboration time with colleagues into the teachers' schedules to discuss what was working and what was not. This intervention worked well in this district. Only 7% of schools remained in the low-achieving category, and grades improved from less than half of students reading and math scores being at their grade level to around 80% success (Manning & Kovach, 2003, p. 32). The supports in place even

closed the previously large racial achievement gap. Although these supports worked well for the demographics of this district, an identical strategy may not work for all areas.

There is a network of free charter schools in the United States called Knowledge Is Power Program (KIPP) and another in New York City called Harlem Children's Zone (Von Hippel et al., 2018). These schools enrol impoverished children who would generally end up at the bottom of the achievement spectrum and are at a very high risk of dropping out. To keep students in school longer each day, these two organizations implemented a before-and-after school program in their middle schools. This minimized the impacts of their low-income home life and being unsupervised in dangerous neighbourhoods in large cities. It also provided supportive adults to care for them and supplement their education, while their parents often worked long hours and could not provide these supports. As well as programs through the school year, they provided summer programs to give students most at risk of summer regression opportunities for continued improvement. In the three years students attended middle school, the achievement gap recognized in the classroom was cut in half, even without a single classroom intervention.

A Boston Public Schools principal decided that her school needed reform, even if the district would not enact it universally (Manning & Kovach, 2003). Harriet Baldwin Elementary School identified that out of a four-point scale, over half the students were scoring only one or two on their mathematics report card. The principal chose not to add pressure on the math teachers; instead, she saw the issue as a community problem. She made sure that the students felt a strong sense of belonging by always making herself visible. During class changes, she was in the hall greeting students. During recess, she was outside on the playground. She built relationships with the parents and community members, even managing to recruit 40 volunteers from the local college to provide support, mentorship, and tutoring both in the classroom and outside school hours. She provided teacher training to implement EAL strategies in every classroom, creating a deeper understanding of the concepts being taught. She coordinated curriculum supports within the school, and she created instructional leadership teams with regularly scheduled meetings to assist educators in providing the most engaging lessons possible. By the end of the two-year intervention, the students' marks went from over half below grade level to 100% attaining or even mastering the concepts (Manning & Kovach, 2003, p. 33).

Sometimes the gains of a program take a long time to realize. In Serbia, there was concern with low achievement and high rates of high school dropouts from their minority Roma population (Rad et al., 2022). The Roma Teaching Assistant Program was developed as a remedial education program to increase grades and reduce dropout rates of the Roma population. When implemented, this program appeared to have little to no impact on the success of the students. Although length of the program and specific rates and grades were not published, it was asserted that those who had access to remedial education beginning in grade one were most affected by the intervention. By the time these first graders entered high school, the gaps were smaller, and the dropout rate decreased. This suggests that early intervention can have lasting impacts and even stronger gains than waiting until the students are older.

In the years 1994-1998, the government in Michigan State changed a policy to create equitable funding of school systems across the state to close achievement gaps (Manning & Kovach, 2003). Until this point, the property taxes funded the school they were closest to. This meant schools in areas of low income, with residents paying lower property tax, would be funded based on that lower property tax rate, and schools in more affluent neighbourhoods with higher property taxes would be also funded accordingly. Michigan began collecting all school funds into one government coffer and distributing them equitably amongst the schools on a per student basis. This had the largest impact on the schools in the low-income regions of the state, where the per student budget more than doubled. Michigan noted that in this four-year period, they had a noticeable increase in high school students opting to take the ACT and SAT exams, implying that more Michigan students were considering college as an option. Standardized testing results in grades four and eight rose to above the national averages. Although these results are remarkable, it was also noted that the schools in the most deprived neighbourhoods

in Michigan did not notice as large an increase as their less deprived neighbours, indicating that simply throwing money at the problem is not an all-encompassing solution. More recently, the Michigan government has cut taxes within the state, drastically reducing school funding. It is yet to see what impact this may have on their achievement rates.

These five examples are all very different, but all have achieved success within their own contexts. Any attempt at closing the disparity is a positive step forward. Additional education and support for both educators and administration on effective teaching practices, and reliable and valid assessment practices, is a wonderful first step. Focusing on straight curricular outcomes rather than real-world, culturally sensitive, personally engaging lessons will not benefit those students in most need (Manning & Kovach, 2003). My own educational system drives an astounding number of outcomes into each subject, and insists that each outcome is reported independently to the administration and to parents. This does not promote whole-student education, but instead views teaching as a series of boxes to be ticked off. This increases the tendency to use a lecture-test format when teaching, even though it has been proven that real-world, project-based lessons are more engaging to students and result in higher rates of achievement (Manning & Kovach, 2003). It would be more beneficial to teach a deeper knowledge of fewer individual concepts than to make a shallow dive at many ideas.

When asked, teachers often report burn out due to inadequate preparation for differentiation and assessment. Teacher preparation programs tend to focus on curriculum and subject content, and rarely focus on how to differentiate for cultural and personal needs. Divisional teacher distribution needs to put more experienced and educated teachers, who have proven their abilities and skill, in classrooms where there are more challenging student demographics. Instead, schools often let more senior staff request classrooms they would like and put new, inexperienced teachers in the most high-stakes classrooms (Manning & Kovach, 2003, p. 37). While keeping the teachers who have the most experience happier with less of a gap in their students' learning, it is most certainly doing a disservice to the community.

Conclusion

Although closing achievement gaps is a difficult undertaking with many moving pieces, it can be done. There is no single reason why these gaps exist (Schultz, 2024), and there is no blanket solution to end them. There is no way to measure or even fully list all the factors that go into why achievement gaps exist; interventions only bandage up the known factors and hope that the solutions can positively affect the factors that remain unseen (Von Hippel et al., 2018). Government investments in education have beneficial impacts on all members of society, and even globally, not only on the children being directly impacted by the investment (Rad et al., 2022). Disparities in educational systems are a direct correlation to disparities in their adult populations. Educated adults are more able to achieve and maintain employment, and are less likely to end up unhoused. The disparity must be stopped at its root by not only funding, but investing, in early childhood. It has been proven that investments in this area have the highest returns for a government than any other funding models (Rad et al., 2022). Students require top quality teaching professionals adept at teaching an increasingly diverse population and trained to maximize learning in all individuals (Williams, 2003). Education is not just a school issue, but also a community issue. Everyone needs to take responsibility for the leaders of the future.

Education is a conduit to peace: peace in inner-city streets, peace in nations, and peace globally. If every human were equipped with the ability to avoid entering conflicts and create solutions to the unavoidable conflicts, the world would be a much safer place to live (Rad et al., 2022, p. 3). Quality education is deemed a human right; we need to afford all Canadians access to this opportunity and ensure that we are doing everything in our power to ensure it is effective (Rad et al., 2022). This can be done; it just takes time and effort. The results will be worth it.

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Decolonizing Secondary Mathematics: Identifying and Removing Barriers to Meaningful Incorporation of Indigenous Knowledge

Gailene Glanfield

Abstract

Despite mandates from 1995 to incorporate Indigenous knowledge in all curricula in Manitoba, secondary mathematic curricula content has very few Indigenous perspectives, and what is provided is limited to viewing Indigenous artwork and architecture through the lens of Western Mathematics. In the spirit of Reconciliation, acknowledging that barriers to the incorporation of Indigenous ways of knowing into secondary mathematics exist and that the development of curricula, teacher education, and professional development programs that respect historical trauma are thirty years overdue.

In 1995, the Manitoba Government mandated incorporating Indigenous perspectives into all curricula in order to provide culturally relevant instruction for Indigenous students (Wilson, 2021). Sadly, it was eight years before the Province published a guide for educators. The rationale contained explanation of Indigenous ways of teaching and appreciation for children, but the incorporation of Indigenous knowledge into secondary mathematics was primarily limited to describing how geometry is used in identifying traditional and contemporary Aboriginal construction "examples of parallels, balance, and symmetry in Aboriginal artwork and architecture" (Manitoba Education and Youth, 2003), counting to 1,000 in the local Indigenous language, and using the stars and moon as a calendar.

As of this writing, Manitoba has an Indigenous Education Directorate within the Department of Education that has developed resources for teachers to include Indigenous knowledge and perspectives "that are based on the premise school environments inclusive of Indigenous knowledge and perspectives will improve student success and completion rates, increase employability skills and reduce transiency" (Manitoba Education and Early Childhood Learning, 2024b, p. 1). However, having explored the webpage, I have found only one resource for secondary mathematics, and the incorporation of Indigenous perspectives is still limited to using artwork and the Medicine Wheel for scale diagrams. Elders are to be brought in to explain the Medicine Wheel, but "it must be clear the activity is for Math purposes only" (Manitoba Education and Early Childhood Learning, 2024a, p. 1). This is an extremely basic incorporation of Indigenous perspective and is an example of a barrier to meaningful incorporation of Indigenous knowledge in secondary mathematics, because the Indigenous content is limited to a Western mathematics perspective.

Despite a desire to incorporate Indigenous perspectives and knowledge into curricula, there remain several barriers ranging from the continuing colonial mindset of curricula (Aikenhead et al., 2019; Cunningham, 2023; Meaney et al., 2022) to teacher education and confidence to deliver appropriate educational experiences in the classroom (Dharan, 2015; O'Keeffe et al., 2019; Wilson, 2021). I believe there are four significant barriers to the meaningful incorporation of Indigenous knowledge: i) the colonial mindset that mathematics is culturally neutral; ii) ignorance of the interconnectedness of Indigenous ways of being, knowing and doing within their culture; iii) the impact of historical trauma and how Western mathematics perpetuates trauma; and iv) the confidence of new and experienced teachers with understanding and implementing Indigenous knowledge in their lessons and classrooms.

Colonial Mindset That Mathematics Is Culturally Neutral

The concepts of "colonial mindsets" and "Western mathematics" are complicated and require explanation, prior to demonstrating how they influence teaching mathematics.

Evolution of Western Mathematics

In ancient times, mathematics existed in many forms and within many cultures. The ancient Egyptians, Hindu, Arabic , and Chinese cultures all have well documented and demonstrated mathematical systems that were "appropriated" during the 17th and 18th centuries by European mathematicians to create "decontextualized abstractions" that made curricula more difficult and therefore worthy of study (Aikenhead, 2018, p. 40). By applying Plato's theories regarding truth and wisdom (Aikenhead, 2018, p. 40), European mathematicians attempted to "divorce" the abstract content of mathematics from any real-world contexts previously utilized by ancient cultures.

Once they had eliminated world views from the subject area, European mathematicians then proclaimed the decontextualized content as "formal discourse." They thus created a discipline that aligned with ancient Greek philosophy, and removed "informal discourse" (Aikenhead, 2018, p. 40) that would allow mathematics to have been invented by humans, and not simply discovered. Based on this manipulation, the study of mathematics was promoted as purely theoretical and without cultural influence.

Colonial Mindset Within Western Mathematics

Due to the effectiveness of European universities creating a "culture-free" discipline, the study of mathematics came to be seen as the only subject area that is truly objective and universal in understanding (Aikenhead, 2018, p. 39). The irony of this claim is that Western mathematics began to take on the cultural values prevelant during the 17th and 18th centuries. Specifically, "political-social-economic power, rather than evidence-based practice" (Aikenhead, 2018, p. 40) dominated within education, and thereby inflitrated society and was carried overseas with colonizers.

Due to the rhetoric proclaimed during this period, mathematical instructors were unaware of how cultures once impacted mathematics (Aikenhead, 2018), and the "promises of opportunity through education" (Garcia-Olp et al., 2022, p. 3) made by colonizers to Indigenous Elders erroneously expected all students to have equal opportunity for success. When graduation rates are examined today, Indigenous students drop out, are in "low-track" mathematics courses, or are working with resouce teachers (Meaney et al., 2022, p. 551). I have told my students that "math is a universal language" and that, despite language differences, equations are solved using the same rules and concepts around the world, demonstrating my own ignorance of the influence of culture on the study of mathematics.

It is this perpetuation of the colonial mindset that is a significant impediment to the incorporation of Indigenous ways of knowing, and results in representation through examination of artwork or phrasing word problems to include Indigenous culture (Manitoba Education and Early Childhood Learning, 2024a). Despite the mandate in 1995, education policy and programs are ineffective and perpetuate colonial ideals (James, 2023). With governments and educators demonstrating a real desire to incorporate meaningful Indigenous ways of knowing into all curricula, in order to "decolonize" mathematics we must return to the past to re-create culturally-based mathematical instruction.

Recognizing and Reintroducing Cultural Mathematics

A group's cultural practices find their foundations in their collective worldview (Aikenhead, 2018), which weaves into every facet of life, including the education of youth. Where this becomes contentious is that Canadian society continues to be influenced by the worldviews of colonizers, and that it is only in recent years we have become engaged in Reconciliation with our Indigenous Peoples. Current secondary mathematics curricula are based on colonial mathematics, which expects students to think intellectually (Aikenhead, 2018) by using standardized methods of analysis. This is in stark contrast to Indigenous mathematics, which engages cultural wisdom and a holistic approach to life (Garcia-Olp et al., 2022) that is foreign to most Western educated teachers.

In order to approach teaching secondary mathematics in a way that incorporates Indigenous teachings and ways of knowing, teachers must first engage in learning about local Indigenous cultural practices and worldviews (Garcia-Olp et al., 2022) so they may be taught the Indigenous ways. Because this is a fundamental and foundational change in teacher education, there must be a commitment on the part of institutions such as governments, universities, and school divisions not just to develop new policy, programs, and training, but to have individuals living "in relation … to the stuctures and environment around us" (James, 2023, p. 513), in order to recognize the importance of cultural worldview within mathematics and work towards elminating colonial bias in teacher eduation.

However, it is not enough to re-educate our educators. We must engage in deep examination of curricula so that we are no longer superimposing Western mathematical concepts onto an Indigenous image or artifact (Aikenhead, 2018), as our current secondary mathematics curriculum recommends (Manitoba Education and Early Childhood Learning, 2024a), but are instead focussing on Indigenous mathematics that "incorporates ancestral knowledge and cultural roots" (Garcia-Olp et al., 2022, p. 14) and reveals mathematical concepts to students through land-based learning. This creation of "Indigenous-centric curriculum" that is delivered by qualified teachers within environments with space for Elders and traditional activities that are "consistent with their culture, history, and customs" (Mardon & Ahmed, 2023, p. 50) may be how we can start to remove the colonial mindset and create Indigenous education programs.

Ignorance of the Interconnectedness of Indigenous Culture

Many non-Indigenous teachers, myself included, have difficulty incorporating diversity in lesson plans when we do not know the backgrounds and cultural influences of our students (Garcia-Olp et al., 2022). This ignorance of how Indigenous ways of knowing are interconnected through story-telling, modelling, an understanding of nature, and past experiences (Aikenhead, 2018; Garcia-Olp et al., 2022; Wilson, 2021) is an impediment to creating mathematical lessons that incorporate meaningful Indigenous perspectives.

School cultures typically reflect the patterns of behaviour, language, values, and belief systems of the "culture of power" (O'Keeffe et al., 2019, p. 154). The culture of power often does not recognize their power, while marginalized cultures are acutely aware of a lack of power, which creates a power imbalance in the classroom and influences school culture. The influence of school culture on a new teacher affects how they perceive diversity. The new teacher follows the school culture, focussing on academic ability rather than attending to cultural needs within the classroom, perpetuating the cultural power (Dharan, 2015, p. 67). Because current teacher-education programs and professional development opportunities may be "superficial treatments of Indigenous issues" (O'Keeffe et al., 2019, p. 154), non-Indigenous teachers cannot fully understand the complexity of Indigenous culture and do not recognize the imbalance of power. Teachers feel that covering curriculum content is their primary role in the classroom, while

"cultural responsiveness" is an additional responsibility (O'Keeffe et al., 2019, p. 169) that is often left out, due to a lack of confidence.

The interconnected nature of Indigenous culture is not something that can be confidently learned without engaging with the community, Elders, and Knowledge Keepers (O'Keeffe et al., 2019). In order for non-Indigenous teachers to gain this knowledge, they must have access to professional development that changes how they think about teaching mathematics (Mardon & Ahmed, 2023, p. 50). As non-Indigenous teachers embark upon this journey that begins "with small innovations" (Aikenhead, 2018, p. 43), they must accept that progress may take years.

The Impact of Historical Trauma and How Western Mathematics Perpetuates Trauma

The concept of "historical trauma" needs to be unpacked prior to explaining how Western mathematics continues to traumatize Indigenous students and their families by using traditional teaching methods.

Understanding Historical Trauma

Since European contact, the Indigenous experience with Western education has been one of broken promises and violence (Garia-Olp et al., 2022, p. 3). "Residential Schools were a centre piece of colonial genocide" (Aikenhead, 2018, p. 42), allowing the Federal Government to kidnap Indigenous children under the premise of providing education. The Indian Act forced First Nations peoples into confined areas, limiting access to traditional lands. It also barred ownership of land (Wilson, 2021), forcing Indigenous people into dependency and at the mercy of the new colonial government.

This systemic racism traumatized the Indigenous population of the time due to the abuses suffered by children at Residential School: loss of languages, stolen lands, exposure to disease, and loss of cultural knowledge (Aikenhead, 2018; Garcia-Olp et al., 2022; Wilson, 2021). These initial traumas have not been resolved, but instead continue through "victim blaming, internalized oppression, or continued expectations to conform" (Garcia-Olp et al., 2022, p. 4). Between 1831 when the Residential School system started and 1996 when it ended (Canadian Geographic, 2024), 165 years of intergenerational trauma were inflicted upon the Indigenous Peoples of Canada through Western education.

Understanding the "generational effect of colonialism … is a key step to identifying and changing perspective" (Wilson, 2021, p. 12) for us all. In Canada, we understand the long-lasting impact of colonization and Residential Schools due to the work of the Truth and Reconciliation Commission, and we know that generational trauma is very real (Garcia-Olp et al., 2022) and continues to impact Indigenous communities.

How Western Mathematics Perpetuates Trauma

Western education, and specifically mathematics, "creates an environment of retraumatization" (Garcia-Olp et al., 2022, p. 4) because the pedagogy is deeply rooted in the belief that Western mathematics is not influenced by culture. This belief is entrenched in curricula, as evidenced by the expectations for how Indigenous perspectives are to be represented in secondary mathematics by using images and superimposing Western mathematics on Indigenous architecture (Manitoba, 2024a). Because the curricula do not attend to Indigenous ways of knowing, racism perseveres. "Mathematics produces Whiteness when other cultures aren't considered … and when it is the standard by which everyone else is judged" (Garcia-Olp et al., 2022, p. 4), imposing Western values on Indigenous students. Thus, the cycle of trauma continues.

This adherence to Western mathematic pedagogy results in ongoing trauma when Residential School Survivors see that the work being done by their children and grandchildren is no different than what they were taught (Garcia-Olp et al., 2022). Children seeking support may retraumatize the parent or grandparent by triggering painful memories of the Survivor. The children see the reaction of the Survivor, and then blame themselves for causing pain. This shame may manifest through disruptive or inappropriate behaviours (Garcia-Olp et al., 2022), creating new trauma for the child.

Recognizing and Removing Trauma From Teaching Mathematics

While work is ongoing in the area of trauma education and healing through Reconciliation, teachers need to acknowledge that teaching mathematics needs to change from being an intellectual acquisition of concepts to one of shared wisdom (Aikenhead, 2018). In order to stop the cycle of trauma, teachers must recognize that secondary mathematics curricula are written in a way that imposes Western cultural values upon their students, and they need to modify instruction. Creating meaningful lessons may require non-Indigenous teachers to engage in "experiencing a cultural immersion … designed by Elders and/or [K]nowledge [H]olders" (Aikenhead, 2018, p. 43) rather than workshops, in order to gain basic understanding of how mathematics evolves within Indigenous culture.

Due to the cyclical nature of historical trauma, our teaching practices need to be analyzed through the lens of decolonization in order to end the cycle (Garcia-Olp et al., 2022). Secondary mathematics curricula needs to be critically examined for instances of the imposition of Western culture and then remove, adapt, or replace those sections with Indigenous ways of knowing, being and doing mathematics. Changing how secondary mathematic curricula is written, taught, and learned from one of "intellectual understandings, to promoting wisdom understandings" (Aikenhead, 2018, p. 43) will, hopefully, result in positive experiences for students and end the cycle of trauma.

Teacher Confidence With Understanding and Implementing Indigenous Knowledge

While teachers understand that they need to respect and be responsive to diversity in their classrooms, it may be easier said than done. Many non-Indigenous teachers are faced with a very real lack of confidence to deliver curricula in a meaningful way to culturally diverse students due to a lack of understanding or knowledge, or fear of offending their students' families (Dharan, 2015; O'Keeffe et al., 2019). This lack of confidence leads to Indigenizing curricula with cultural representations or ignoring students' backgrounds and cultures (Cunningham, 2023), claiming the curricula is culture-free. It is true that many non-Indigenous teachers are limited due to lack of access to resources and Elders, but this must be recognized as an excuse and more effort made to educate ourselves on appropriate experiences for our Indigenous students.

Currently, teachers are trained through a standard model of Western education that was developed in the 19th and 20th centuries (Dharan, 2015), which focused on teacher knowledge and preparedness. Teacher competency was measured by the academic success of their students (Aikenhead, 2018), and mastery of subject matter resulted in increased confidence. Teachers today struggle to create lessons that attend to the diversity in the classroom while at the same time meet the expectations of their schools (Dharan, 2015). Increasing teacher confidence will require a commitment by all stakeholders in public education to implement meaningful change by altering teacher training, creating curricula that reflect cultural diversity, and changing school cultures to value empathy and relationships over academic achievement (Mardon & Ahmed, 2023), thus altering how teachers perceive their students and increase efficacy and confidence.

Conclusion

Identifying the barriers to the incorporation of Indigenous ways of knowing into secondary mathematics was easy. There is a lot of research on how educational programs are not supporting our Indigenous youth, beyond those I have referenced in this paper. Acknowledgement and removal of what I believe are the four most significant barriers – i) colonial mindset that mathematics is culturally neutral; ii) ignorance of the interconnectedness of Indigenous culture; iii) the impact of historical trauma and how Western mathematics perpetuates trauma; and iv) the confidence of new and experienced teachers with understanding and implementing Indigenous knowledge in their lessons and classroom – by governments and institutions is a critical step in decolonizing curricula. However, changes to mathematics curricula and how teachers are educated require that politicians recognize that curricula are actually barriers (James, 2023) and that universities and colleges need to change their teacher education programs to incorporate more access to Indigenous Knowledge Keepers and Elders by their students (Meaney et al., 2022). Before real change can begin, these difficult conversations need to be had within these institutions, involving Indigenous educators in the development of curricula and programs that incorporate meaningful Indigenous knowledge into secondary mathematics instruction.

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From Ban to Balance:
A New Approach to Cell Phones in the Classroom

Nathan Strange

Abstract

Many K-12 schools, including those in Manitoba, Canada, have implemented cell phone bans to reduce distractions in the classroom, but these measures often fail to improve student focus and can negatively impact learning, and school-community relationships. Instead of bans, schools can adopt balanced cell phone policies with designated usage times, digital citizenship education, and the integration of educational technology. Engaging students, parents, and staff through regular communication and feedback, along with forming a technology support team, can help to refine policies and enhance learning outcomes. These strategies maximize the potential of cell phones while fostering a productive educational environment.

Many schools, including all K-12 public schools in Manitoba, Canada, have implemented comprehensive cell phone bans in an attempt to reduce distractions and improve student focus (Province of Manitoba, 2024), but these measures often fail to achieve their intended goals and can result in considerable negative consequences.[1] These bans are problematic due to their negative effects on student learning and engagement, their failure to prepare students for the real world, their inherent ineffectiveness, and their negative impact on relationships within the school community.

Rather than resorting to outright bans, schools can implement several solutions to address these challenges. These solutions include implementing a balanced cell phone policy with designated usage times and clear guidelines for educational integration. Schools can also educate students on digital responsibility regarding the use of technology through workshops and curriculum that promote digital citizenship. Additionally, leveraging educational technology by incorporating apps and interactive learning tools can enhance engagement. Fostering parental and student involvement through regular communication and feedback, such as surveys and collaborative efforts, would help to ensure a consistent approach between school and home. Finally, forming a technology support team to evaluate and adapt policies based on data and feedback ensures that these strategies remain effective and responsive. By adopting these strategies, schools can maximize the educational potential of technology while maintaining a productive and supportive learning environment.

Problems Surrounding Cell Phone Bans

Cell phone bans create challenges by negatively affecting student learning and engagement, failing to prepare students for the real world, being inherently ineffective, and negatively impacting relationships within the school community. One of the most significant drawbacks of cell phone bans is the negative effect that it has on student learning and engagement. This includes the restriction of students' access to information. In today's digital age, instant access to a wealth of information can dramatically enhance the learning experience (Magnusson et al., 2023). Students often use their phones to conduct research and access educational apps, e-books, and online resources that can bolster classroom discussions. By prohibiting these devices, schools limit opportunities for interactive learning and research capabilities that are crucial for developing critical thinking skills.

[1] Unless otherwise specified, the information in this article is derived from the author's professional experience as a classroom teacher and administrator in Manitoba, Canada, since 2007.

Furthermore, many educators leverage mobile technology to foster engagement in the classroom. Various applications are designed to facilitate quizzes, collaborative projects, and interactive discussions, all of which promote active participation among students (Haleem et al., 2022). According to a UNESCO report, while some technology may have negative effects and contribute to inequalities, it can enhance engagement and elevate the quality of learning for a significant number of people (Global Education Monitoring Report Team, 2023). Unless students have classroom access to other types of mobile technology (such as tablets or laptop computers), banning phones effectively places a barrier between students and valuable online learning tools, rendering lessons less dynamic and engaging. Instead of cultivating an interactive learning environment, cell phone bans often lead to a more traditional and lacklustre approach to education, diminishing students' enthusiasm for lifelong learning.

Cell phones are commonplace in the real world, and students will encounter them in various professional and personal contexts throughout their lives. Rather than shielding students from technology, schools should prepare them to use it responsibly and effectively. Removing phones from the classroom eliminates an opportunity to teach one source of digital responsibility, which is at the heart of this issue and relates to the overarching concerns about bans (Smale et al., 2021). Teaching students how to integrate their phones in an educational environment encourages responsible use and critical thinking about technology's role in their lives. Banning cell phones in schools undermines this essential learning opportunity, preventing students from developing crucial digital literacy and time management skills. In a world increasingly defined by technological integration, students must learn to manage digital tools effectively, thus cultivating the competencies necessary for a technology-driven world.

There is no conclusive evidence to support the effectiveness of comprehensive cell phone bans in achieving their intended goals, such as improving mental health, enhancing academic performance, and reducing cyberbullying (Campbell et al., 2024). Research has shown that comprehensive phone bans can have negative effects on the levels of student satisfaction and motivation (Smale et al., 2021). Similarly, regarding cell phone bans for drivers, evidence suggests that while there was a 60% reduction in visible texting and driving between 2004 and 2010 in the United States, there was no significant decrease in accidents, injuries, or fatalities (Cheng, 2015, p. 1434). Regardless of the well-meaning intentions behind these bans, the data suggests that they may not lead to the desired outcomes.

The implementation of cell phone bans has a negative impact on relationships within the school community, because it often fosters conflict between students, educators, and parents. Many students are likely to find ways to circumvent restrictions, whether by using other devices or concealing their phones (Magnusson et al., 2023). Such behaviour can lead to mistrust between teachers and students, contributing to increased disruptions rather than a reduction in distractions. Furthermore, a ban can create a culture of rebellion, whereby students may feel compelled to defy rules, resulting in greater distractions and a lack of respect for authority (Magnusson et al., 2023). Prior to the implementation of the provincial cell phone ban in Manitoba, many parents expressed reservations, citing safety and communication concerns as key issues (Baxter, 2024), but schools were mandated to impose the bans. This tension between parents and schools highlighted differing priorities regarding student welfare and the role of technology in education, creating a notable conflict at the local level. Ultimately, these dynamics not only undermine trust but also hinder collaboration among all members of the school community, making it more challenging to work together towards shared educational goals.

Solutions to the Challenges of Cell Phones in the Classroom

By implementing thoughtful policies and integrating technology in a balanced, responsible manner, schools can not only reduce distractions but also enhance learning outcomes and better prepare students for the digital world they will encounter beyond the classroom. A

balanced cell phone policy is necessary for managing the use of technology in schools while minimizing the potential for distraction. Schools can introduce designated usage times, allowing students to use their phones during specific periods, and lessons could include a phone-specific component that is built into the classroom routine. This strategy ensures that students can access the benefits of technology, such as conducting research, using educational apps, or engaging in collaborative projects, without it interfering with the flow of lessons. Establishing clear guidelines is also crucial in this policy. By setting expectations on when and how phones should be used, schools can foster responsible usage through normalization and reduce the temptation for students to use their phones for non-educational purposes. This balanced approach would help students focus on their studies while still benefiting from the tools that cell phones offer.

Education on digital responsibility is instrumental in preparing students for a world increasingly driven by technology. Schools can provide learning opportunities that are tied to curriculum that teach students how to use their phones responsibly, emphasizing digital citizenship, privacy, and the long-term effects of their online behaviour. These lessons could address topics such as managing screen time, avoiding cyberbullying, and understanding the risks of sharing personal information online. When the lessons are integrated into the broader curriculum delivery, students can gain a better understanding of how to evaluate online sources, build a positive digital footprint, and protect their mental health in a technology-driven world. By using a student-centred approach and teaching students how to responsibly navigate digital spaces, schools ensure that they develop the skills needed to thrive both academically and socially in an increasingly digital society (Thomas & O'Bannon, 2013).

Digital tools, particularly cell phones and the technology that surrounds them, have the potential to significantly enrich the learning experience and support sustained student engagement. Schools should actively promote the use of educational apps that can enhance the classroom experience, such as quiz platforms, collaborative tools, and research databases. These resources enable students to access learning materials and track progress in a more efficient, interactive and dynamic way, fostering deeper understanding and engagement (Haleem et al., 2022). Moreover, technology can be used to create a more interactive classroom environment. Group projects, real-time feedback, and online discussions all benefit from the use of cell phones, encouraging student participation and collaboration. By leveraging cell phones and other digital tools, schools can foster a more engaging and modern learning environment that prepares students for the digital demands of the future workforce.

To ensure that cell phone policies remain effective and adaptable to the changing needs of students and technology, schools should establish a technology support team. This team could include educators, students, and parents, all of whom play a vital role in shaping and evaluating school policies. The support team's primary responsibility would be to gather feedback from various stakeholders, assess the success of current policies, and make adjustments as needed. For example, data on student performance, engagement, and satisfaction with the current policy could be collected to monitor how cell phone use impacts the learning environment. Additionally, as Banoğlu et al. emphasize, school administrators must stay on top of emerging trends in technology and education to ensure that their school's approach remains relevant and aligned with best practices. By taking on leadership roles within school-based tech support teams, administrators can guide the development of well-designed, widely supported, and adaptable cell phone policies that ultimately contribute to lasting, positive shifts in school culture (Banoğlu et al., 2023). Regular evaluation and open communication will help to ensure that technology, and specifically cell phone policies, are continuously improving, fluid in nature, and aligned with the needs of both students and educators.

Fostering parental and student involvement is critical for creating a consistent and supportive approach to cell phone use between school and home. Schools are responsible for communicating with parents about the rationale behind their cell phone policies, keeping them informed about when and how students are allowed to use their devices. This communication

will help parents understand the school's stance and address any concerns they may have, such as issues related to safety or the ability to contact their children in emergencies. This practice involves parents as stakeholders in the process of creating clear guidelines for use at the local level (Boila et al., 2020). Additionally, hosting parent workshops or providing resources can offer valuable insights into how parents can manage their children's technology use at home, promoting a consistent approach between home and school. Schools should also involve students in the process by gathering their input through surveys or discussions, allowing them to share their opinions and suggestions. This participatory approach empowers students, gives them a sense of ownership over the rules, and helps to ensure that the policies are fair and balanced. Finally, creating peer mentorship programs whereby older students mentor younger ones on responsible technology use can further strengthen the school's approach to digital citizenship, fostering a positive, responsible attitude toward technology.

Conclusion

While cell phone bans in schools are often implemented with the goal of reducing distractions and improving student focus, they frequently fail to achieve these objectives and can have negative consequences. These bans negatively affect student learning and engagement, fail to prepare students for the real world, are inherently ineffective, and strain relationships within the school community. However, by implementing a balanced cell phone policy with designated usage times and clear guidelines, schools can reduce distractions while accommodating responsible use of technology. Educating students on digital responsibility through workshops and integrated curriculum will prepare them to navigate the digital world with critical thinking and responsibility. Leveraging educational technology through the use of apps and interactive tools can enhance learning and keep students engaged. Additionally, fostering parental and student involvement through regular communication and feedback will help to create a consistent approach between school and home. Finally, forming a technology support team to evaluate regularly and adapt policies ensures that these strategies remain effective and responsive to the needs of both students and educators. By adopting these solutions, schools can transform technology from a source of distraction into a powerful tool for learning, empowering students with the skills they need to excel in an increasingly digital world.

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Multi-Tiered Systems of Support for Students in Manitoba

Cara L. Butler

Abstract

Multi-Tiered Systems of Support (MTSS) is a highly researched and well-documented method of structuring academic and behavioural programs. Manitoba Education's resource documents for school leaders include portions of the MTSS structure but do not provide explicit instruction for its use in implementing programs. Manitoba should follow the lead of other provinces and explicitly recommend the MTSS structure to implement academic and behavioural school-wide programs.

Initially called Response to Intervention (RTI), Multi-tiered Systems of Support (MTSS) is now more commonly used in schools (Braun, 2018). RTI and tiered intervention were recommended for schools in the United States through the fallout from the No Child Left Behind Act. Clarification and expansion of MTSS were mandated in the United States after the passage of the Every Student Succeeds Act in 2015 (Braun, 2018). In Canada, RTI initiatives began around 2005 (McIntosh et al., 2011). Because Manitoba Education has no firm MTSS policy, Manitoba school boards and divisions have enacted different parts of MTSS at their discretion. Manitoba Education should provide documentation to schools outlining MTSS as the predominant structure to ensure inclusion for all students. This article focuses on MTSS, its benefits and criticisms, the current inclusion documentation supplied by Manitoba Education, and an example of a publication from another province that encourages widespread adoption.

Multi-Tiered Systems of Support

Initially, the RTI approach was based on quality school-wide instruction, screening and progress monitoring, a tiered service delivery model, and eligibility determination (McIntosh et al., 2011). Now, RTI is the primary metric for decision-making in MTSS (Ysseldyke, 2023). Borrowed from a health service delivery model, MTSS is a general education framework in which students are assessed and monitored frequently during the year. Interventions are enacted through data-driven decision-making (Braun et al., 2018; Graham, 2020; Sulkowski et al., 2014). Tier 1 refers to universal standards, whereas Tier 2 and Tier 3 offer more targeted interventions and increased student support (Braun et al., 2018). Tier 2 is supplementary, while Tier 3 is more intensive (Graham, 2020). In practice, MTSS is responsive to students who may not be successful in general education, with interventions added to produce improved learning outcomes for all students (Ysseldyke, 2023). The essence of MTSS is that if students are non-responsive at Tier 1, then there should be increased support for the students at Tier 2, and so forth. MTSS is inclusion in practice, based on the premise that all students can learn but may need increasing levels of support in particular areas. (See Appendix A for some images regarding the structure of MTSS.)

Tier 1 Interventions and Support

The core of MTSS is a set of universal instructional techniques and standards for all students, known as Tier 1. Strategies and programming at Tier 1 include the following:

- instructional programs that align with provincial standards
- high-quality instructional methods
- research-based materials and strategies
- universal design for learning (UDL)

- differentiated instruction (DI)
- culture of high expectations, including clear teaching and learning expectations from administrators
- inclusion of all students in the learning environment, that is, meeting the needs of students with disabilities
- programs that build and strengthen relationships
- teacher support teams that emphasize collaboration and coordination
- inclusion of community programs and groups, including parents
  (adapted from the Center on Multi-Tiered Systems of Support, n.d.; Nova Scotia Public School Program, 2019; Ysseldyke, 2023)

When Tier 1 universal standards are implemented school-wide, most students will respond to the structures and programs in place here. Using the data collected by the school, students who continue to struggle or not meet targets, sometimes called non-responders, are identified and elevated to Tier 2.

Tier 2 Interventions and Support

Students identified as non-responsive to Tier 1 programming are targeted for short-term, non-permanent Tier 2 intervention. Strategies and programming at Tier 2 include the following:

- small-group (3-7 students) evidence-based instruction,
- specific learning targets,
- increased family involvement,
- increased coordination with teachers and educational staff,
- frequent monitoring of results,
- instruction and support adjustments based on student progress,
- continuation of Tier 1 through Tier 2, with small-group intervention in addition to universal supports
  (adapted from the Center on Multi-Tiered Systems of Support, n.d.; Nova Scotia Public School Program, 2019; Ysseldyke, 2023)

The structure of MTSS allows school leaders to choose their direction and specific programs for each tier, with the understanding that data and research must drive all educational decisions and programming choices. The main characteristic of the increased support in Tier 2 is targeted small-group support with different school team members called in to work with students. Additional team members could include resource teachers, counsellors, behaviour specialists, and reading specialists. However, based on available data and observations, there still may be non-responders at the Tier 2 level.

Tier 3 Interventions and Support

Students who are non-responsive to Tier 2 programming are provided with extensive individual targets and support at Tier 3. Strategies and programming at Tier 3 include the following:

- individualized interventions and support
- interventions more intensive than Tier 2
- increased family involvement
- increased coordination with teachers and educational staff
- frequent monitoring of results, which may include drill-down assessments to pinpoint specific student needs
- instruction and support adjusted based on student progress

- possible involvement by outside agencies
- continuation of Tier 1 and Tier 2 interventions, as supported by data (adapted from the Center on Multi-Tiered Systems of Support, n.d.; Nova Scotia Public School Program, 2019; Ysseldyke, 2023)

Tier 3 is where the highest level of support comes in for students. Using available data and observations, educational staff can support students by means of evidence-backed programs and tools. The school leadership team should come together to plan for students who need substantial support. The following approaches offered by MTSS are proactive and preventative for identifying student needs (Graham, 2020).

Benefits and Criticisms of MTSS in Practice

An example of how MTSS can be used in schools is the framework offered by Sulkowski et al. (2014), based on an intervention model that relies on hiring homeless liaisons to help school-based mental health professionals support homeless students. In Tier 1, school districts would hire a homeless liaison to facilitate housing and other necessities for these students. Universal interventions would occur for the whole school population, including attendance programs and other measures to foster a safe school climate and positive home-school relationships. Students with at-risk behaviours or other problems affecting their academics would be referred to Tier 2 for group-based therapy and interventions. Non-responders would then be elevated to Tier 3 for a functional behavioural assessment and intensive intervention based on that assessment. Although this framework is from the United States, where communities are required to hire a homeless liaison, the description of the framework is a strong example of how the service delivery model of MTSS can be applied to many types of educational problems in various settings.

Additionally, while working on implementing MTSS programs in schools, districts can use an MTSS approach to help educators with implementation. Freeman et al. (2016) proposed applied behavioural science strategies for school improvement using an MTSS framework. When schools choose to reform, educators must change their practices and therefore need focused support and coaching. Professional development alone is insufficient because teachers who use the MTSS framework of outcomes, data, practices, and systems require specific coaching and technical assistance. Training for all teachers may be considered the initial Tier 1 MTSS intervention, followed by Tier 2 and Tier 3 coaching supports for struggling teaching staff. The critical component is that data can constantly be used to guide leadership and coaching teams to facilitate targeted interventions for each teacher. Freeman et al. provided examples of different coaching techniques and additional literature to support their position. Using an MTSS structure for professional development can be an effective method for the roll-out of programs. Ultimately, the success of implementing MTSS is dependent upon school leadership.

Schools can implement both academic MTSS (A-MTSS) and behavioural MTSS (B-MTSS), but implementing separate support systems can confuse educators in schools. Harn et al. (2015) discussed the impact of a pragmatic, longitudinal mixed methods study working with two districts that wanted to implement a reading tiered support system but had already established B-MTSS. The researchers used DIBELS (Dynamic Indicators of Basic Early Literacy Skills)[1] and the Woodcock Reading Mastery Test – Revised (WRMT-R)[2] to monitor the teachers' progress in

[1] DIBELS is a Level A literacy skills assessment system for Kindergarten through Grade 8 (DIBELS, n.d.). The assessments are designed to be quick for teachers to administer and form the basis for targeted intervention.

[2] The Woodcock Reading Mastery Tests is a Level B assessment system to delve into students' skills in literacy and phonological development (Pearson, n.d.). The assessment can be used to develop targeted remediation for all students. The assessment is designed for both children and adults.

implementing the reading program. Over the course of the four years of the study, educators were provided professional development in response to the quantitative DIBELS and WRMT-R results. Additionally, the researchers used a qualitative case study approach to examine some of the non-responders to intervention in the third year of the study, collecting various data about each student. Harn et al. concluded that the two systems of tiered support for reading and behaviour in these districts should be integrated rather than separated, and that further research should be conducted. They admitted their error of not establishing the integration at the start of their study, which is why they highlighted it in their suggestions for future research.

The predominant criticism of implementing MTSS in schools is that its success depends upon clear and consistent roll-out of the program (Braun et al., 2018). For any MTSS to succeed in schools, the leaders, including administrators and coaches, need to have firm direction and expectations regarding implementation. Closely related is that teachers need to have buy-in for successful MTSS programs in schools (Cook et al., 2015), because teachers' positive attitudes about implementation are essential. In schools with high teacher turnover, teacher training and clear expectations are imperative (Braun et al., 2018). Administrators must also ensure that all tiered support levels are clear and run effectively in their schools, because teachers can be frustrated by the lack of Tier 3 support for students who are unresponsive to Tier 1 and Tier 2. Implementing MTSS successfully requires educational policy, especially resources and professional development (Nitz et al., 2023). These criticisms point to the need for support from upper administration and leadership, and also from provincial education authorities.

Current Support Documentation for Manitoba Teachers

Manitoba Education provides an incredible amount of documentation to support student learning in schools, but stops short of specifying MTSS in any of its recent documents. In Supporting Inclusion: Modification and Individualized Programming in Manitoba Schools, there is the following statement: "When a student does not meet eligibility criteria for modified subjects/courses but is struggling to meet grade-level curricular expectations, school teams will explore other instructional supports for addressing student diversity, including differentiated instruction and adaptations" (Manitoba Education and Early Childhood Learning, 2023, p. 18). However, the "other instructional supports" are not discussed. Policymakers could have used this opportunity to explain MTSS specifically, including its effectiveness in supporting inclusion. Similarly, in Standards for Appropriate Educational Programming in Manitoba, school divisions are encouraged to follow specific criteria to support all learners (Manitoba Education and Early Childhood Learning, 2022). The requirements include UDL, a substantial trademark for Tier 1 in MTSS; however, the document does not mention any tiered support for students.

Older documents still referenced by Manitoba Education also include MTSS language, but without specifying "MTSS." In Student-Specific Planning: A Handbook for Developing and Implementing Individual Education Plans (IEPs), all teachers are expected to employ DI techniques, adaptations when DI is insufficient, modifications when adaptations are inadequate, and individualized education programming when the student is non-responsive at the lower levels (Manitoba Education, 2010). *Towards Inclusion: Supporting Positive Behaviour in Manitoba Classrooms* encourages teachers and schools to implement a three-tiered positive behaviour support model (Manitoba Education, 2011). The document is excellent for teachers and schools to outline MTSS Tier 1 programming, but fails to detail how non-responders are referred to receive additional Tier 2 and Tier 3 support. The terms Tier 1, Tier 2, and Tier 3 are never mentioned in *Towards Inclusion*, which states that schools can implement a three-tiered support (Manitoba Education, 2011). Manitoba would not have to start from scratch to support teachers and schools, because other programs and documentation can be accessed to help schools. (See Appendix B for images showing tiered support in Manitoba documentation.)

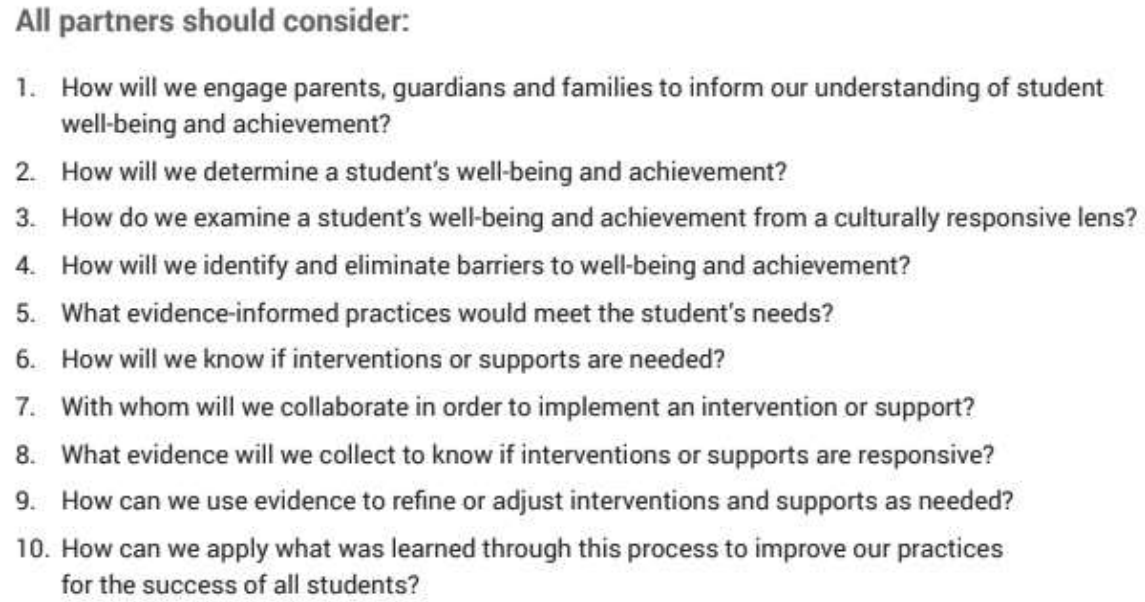
Other Endorsements of Multi-Tiered Systems of Support

There is significant support for MTSS elsewhere in the United States and Canada. School information systems software company PowerSchool (n.d.) offers software to monitor MTSS in schools that use their system. Another widespread program is Positive Behavioural Interventions & Supports (PBIS). As of 2023, PBIS was running in over 25,000 schools in the United States (PBIS, n.d.). Nitz et al. (2023) completed a qualitative literature review of 40 studies reviewing different MTSS programs, including PBIS, for school behavioural modification. The researchers ultimately concluded that MTSS is effective at the teacher level and for students, resulting in decreased off-task behaviour and increased academic achievement in elementary classrooms. The PowerSchool software would be a method to analyze student data found in MTSS schools.

Furthermore, PBIS may reduce racial discrimination from behaviour referrals. Greflund et al. (2014) analyzed the discipline records of 1,750 students from five rural British Columbia and Alberta schools implementing PBIS. Contrary to their hypothesis that Indigenous students would disproportionately receive office discipline referrals (ODRs) in these schools, they found that both Indigenous and non-Indigenous students received comparable numbers of ODRs. Because PBIS offers culturally responsive suggestions and interventions, PBIS may be a remedy for reducing inequity in addressing behaviour in schools. Nevertheless, Greflund et al. were careful to remind readers that their study may not be representative of behavioural patterns across Canada. Although further research is needed, the benefits of establishing MTSS support for schools were clear in Greflund et al.'s research.

Nova Scotia Public Schools Program (2019) offers educators and school boards a primer document about MTSS: Multi-Tiered System of Supports: A Quick Guide. The informative four-page paper provides a structure that schools can use to start MTSS. It benefits all parties involved because the questions are designed to target potential struggles with implementation. (See Figure 1.)

Figure 1
Questions from the Nova Scotia MTSS Documentation



(taken from Nova Scotia Public School Program, 2019, p. 4)

The Nova Scotia document offers direction for school administrators to develop a structure for successful MTSS implementation. It sends a message to educators that provincial education authorities encourage and support this program (Nova Scotia Public School Program, 2019). Ontario's *Right To Read: Public Inquiry Into Human Rights Issues Affecting Students With Reading Disabilities* document also highlights the need for structured, tiered systems of support in schools (Ontario Human Rights Commission, 2022). Manitoba can follow other Canadian provinces' lead and lay out documentation that endorses MTSS as the appropriate structure for all schools to implement academic and behavioural standards.

Conclusion

Manitoba Education (2023) has recently published its *Standards for Appropriate Educational Programming in Manitoba,* which outlines every requirement of schools and school administrators. Given its two decades of positive research-based evidence, the MTSS framework is a logical choice for inclusive school improvement in academics, behaviour, or both. Offering universal support in Tier 1, small-group support for non-responders in Tier 2, and intensive interventions in Tier 3 provide provides a structure and outline for educators to implement. With strong school leadership and evidence-based programming choices, MTSS is an effective framework to support inclusion in schools. Manitoba Education needs to help its school leaders by developing its own document that prescribes MTSS.

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Risky Play: What Happens When Kids Are Not Risky?

Martyna Figueiredo

Abstract

Risky play is climbing, high-speed activities, dangerous exploration, dangerous elements, rough and tumble, and disappearing experiences. There are three primary barriers to risky play: the introduction of electronics, building safer playgrounds in new urban-designed cities, and parent involvement in overscheduling activities have been hindering children from participating in risky play. Three solutions to these problems are phone-free-schools, child-centred playgrounds, and opportunities for risky play in schools during the day. This paper accesses information from a variety of sources that include virtual and text referencing.

The act of play has a vital role in a child's development. Many children spend most of their day wanting some form of play whereby they desire to be curious and free. Play is the stepping stone to creating thriving adults (Haidt, 2024). Growing up, a lot of my time was spent outside with very little adult supervision on the playground, which inspired independent play and exploration. Opportunities to imagine, create, and build were prominent and experienced daily. Children played outside from morning until dusk. Outdoor play promotes imagination and helps children develop coordination while they are being active (LeMasters & Vandermass-Peeler, 2023). These opportunities promote a form of risky play.

Risky play is an opportunity for building skills, solving problems, and being challenged “with the potential for physical harm” (Harper & Obee, 2021, p. 3). Children who attend schools with risky play are happier and more engaged during instructional time, and they are less likely to experience anxiety and depression (Durning et al., 2024). The importance of risky play has been overlooked and even prevented by adults who fear potential dangers. There is considerable concern and barriers surrounding children’s participation in risky play (Obee et al., 2013). Risky play has been discouraged by the introduction of electronics, the construction of safer playgrounds in new urban-designed cities, and increased parent involvement in overscheduling activities. Phone-free schools, child-centred playgrounds, and opportunities for risky play in schools during the day are vital in facilitating risky play in our children’s lives.

Phone-Free Schools

With the widespread use of electronics, children have had fewer opportunities for risky outdoor play. iPad and smartphones pull children into the cyberworld, where they lack opportunities for physical and emotional development. In late childhood, a child’s brain grows at a slow pace while they develop neuropathways (Haidt, 2024). During this vulnerable time, it is imperative that children are given opportunities to be in a physical environment where they can explore, experiment, take risks, and potentially make mistakes (Boaler, 2019). This is the time when children should be outside, moving their bodies, and using their senses to learn about the world around them. Spending time on a device takes away from opportunities to get outside and take part in “climbing, high speed activities, dangerous tools exploration, dangerous elements, rough and tumble, and disappearing experiences,” which are all forms of risky play (Haidt, 2024, p. 77). Even though many online games simulate characters to play a part in this type of risky play, they do not engage children to use their bodies to participate in the actual risk.

Phone-free schools are vital in creating opportunities for children to communicate and experience risky play (Haidt, 2024). When phones are out of reach during the day at school, students are more likely to engage in person with their peers in the building, and there are greater opportunities for children and adults to socialize, engage in risky play, collaborate, and learn to communicate face-to-face. Parents can join forces with schools in reiterating and

respecting the rules of electronics being brought to school. When children receive the same message from both school and home, they are more likely to follow and respect the rules and expectations. At home, parents can also establish age-appropriate expectations for electronic use. Creating phone-free schools empowers children to become present and participate in teamwork, creativity, collaboration, and human interaction that can include risky play.

Playground Design

Playgrounds were designed for children to explore and play. When children explore independently, they become "thrill seekers" (Haidt, 2024, p. 76). Children tend to engage in risky behaviour when they are unsupervised. Most children will experiment with these thrills until they are stopped or they experience an adverse effect, such as a fall. Playgrounds were originally designed to facilitate these risks, but in the 1990s adults decided that these types of playgrounds were too dangerous for children (Haidt, 2024). Society felt there were too many injuries occurring while children explored high-risk play structures. There are many "dependencies concerns" that contribute to playground safety and structure building (Meijer et al., 2024, p. 8). Rules and regulations change as society's views and expectations evolve. In this educator's experience, the question arises as to why children are no longer using playgrounds. In many countries, new standards must be followed, including the type of material used and the design of the playground. The newer playgrounds are no longer "thrill seeking" opportunities and become boring. Children appear to be more reluctant to engage in these playgrounds where there is no thrill.

Child-centered playgrounds need to be owned by children, where they can create, invent, construct, and destroy the space continuously (O'Donnell, 2016). Trained individuals called "playworkers" interact with children to promote risk taking and encourage children to assess their own risks when participating in risky play (O'Donnell, 2016, 7:47). As caregivers, teachers are wired to intervene when risk is a possibility, but trained individuals provide the support children need to facilitate risk on the playground.

Many of these playgrounds are more engaging when materials such as loose parts are incorporated (Spencer et al., 2021). Playgrounds in the United Kingdom (UK) have been built within communities, encouraging children to participate in this type of play (O'Donnell, 2016). Loose parts create a feeling of nature where children oversee the design process using the materials provided, such as building materials, boxes, and crates. The playgrounds serve as the hub for children who may not have access to green space for play. Children can enjoy the playgrounds independently because they are already part of the community.

In other parts of the UK and the United States, destination playgrounds are built where children can be dropped off and picked up by their parents (O'Donnell, 2016). Play Corps is a summer program that has been operating in the inner city of Providence, Rhode Island (O'Donnell, 2016). Children are motivated to play outside in their community playground all day, using loose parts that have been provided. Play Corps play workers fill pods with supplies such as duct tape, boxes, and building materials to inspire children to become creative. When playgrounds are self-directed, children have greater opportunities to experience risky play.

Risky Play at School

Schools are essential places for children to engage in risky play, especially since parental involvement sets the tone for how children play outside school hours. When parents decide to live in urban settings, they must adjust to their surroundings. As urban design changed, so did the opportunities for children to play alone. Parks and green spaces were developed to suit smaller land space. There was little room left for playground exploration and development. Cities were built with activities further away from each other, making it impossible for children to walk themselves and forcing them to rely on adult transportation (Meijer et al., 2024). Families

began overscheduling extracurricular activities, which led to fewer opportunities for unstructured, independent, risky play. Parents and adults managed how time was allotted for independent play. Schools are responsible for setting the stage for play during the school day.

Schools need to create an environment that engages children in risky play. Children spend the majority of their day at school with their peers, making this the only opportunity to play during the school day. Most children want to participate in risky play at school, but they fear being disciplined or reprimanded (Durning et al., 2024). As a parent, I see a direct consequence of what happens when children do not experience risky play throughout the day. After-school meltdowns and outbursts are just a few examples of what happens when play is restricted and led by adults.

For risky play to succeed in schools, all staff and community members must collaborate and educate themselves on the topic. They need to develop a "shared vision and values" that acknowledge everyone's perspective on play (Durning et al., 2024, p. 92). Schools need to establish a policy that emphasizes the diverse types of play and their importance. A clear policy will guide school-wide staff training, with parents involved in the learning sessions, so that risky play can become an integral part of the school culture. Constant communication is key for all parties to feel comfortable in implementing risky play during school hours.

School design and location play another role in creating a risky play environment. Where schools are built can determine what type of opportunities they can offer children during the day. Schools with open fields, community ponds, and green spaces have an advantage in facilitating risky play. Natural environments tend to be more engaging for children and encourage risky play (Higginbottom, 2023). Having three ponds and access to green spaces close to my school, students have more opportunities to engage in outdoor risky play. It is up to the adults to find creative ways to implement these experiences throughout the school day. Urban schools with limited or no green space should implement more loose parts, such as tires, pipes, and sticks, that inspire creativity through risky play. With both of my children attending a school with no green space for play, I recognize the importance of access to after-school outdoor play. Risky play should be incorporated into the school environment.

Conclusion

Risky play is a beneficial experience that sets the stage for problem-solving, learning, and developing skills that will later encourage independence in adulthood. When children are presented with risk and participate in opportunities to make mistakes that encourage critical thinking, they experience "immunization for fear" (Vanbank, 2022, 6:30). Adults have discouraged risky play by introducing electronics, safer playgrounds in new urban-designed cities, and parent involvement in overscheduling activities. Parents' decision-making for their children's play is influenced by their own risky play during adolescence (Obee et al., 2013). These experiences are one of many factors that influence opportunities for risky play. Phone-free schools, child-centred playgrounds, and opportunities for risky play in schools during the day encourage children to become resilient, develop communication skills, and manage unexpected challenges. Children enjoy risky play while learning to control their bodies, interact with peers, and adopt an active lifestyle (Brussoni et al., 2024). All children should be granted opportunities for risky play to develop and grow.

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Teacher Attrition: From Shortages to Solutions

Coreen Johnston

Abstract

The global teacher shortage is reaching critical levels, with many educators leaving the field early and schools struggling to fill vacancies. Key aspects of teacher attrition include inadequate compensation, poor working conditions, and barriers facing potential educators, along with impacts on student achievement and school operations. Addressing this complex problem requires a multifaceted approach, incorporating competitive compensation, enhanced work environments, strong professional systems, and policy reform. Resolving teacher shortages demands urgent collaborative efforts from stakeholders to ensure a sustainable future for education worldwide.

Teacher shortages are a growing concern in many countries. The problem is becoming severe as more than 30% of educators leave the profession within their first five years of employment (Wong, 2023, “COVID-19” section, para. 2). In the United States, almost 90% of public schools in 2023-2024 struggled to fill all staff positions (Khalilipour, 2024, para. 1). To gain insight into the problem of retaining and recruiting educators, it is constructive to study its roots. Staffing deficits are better understood by examining common causes, barriers facing potential teachers, and the impacts on student learning and school operations. A wide variety of solutions must be implemented to address the problem because the reasons for staffing deficits are multifaceted. Solutions include financial incentives, improved working conditions, and supportive staff communities. Effective recruitment practices and revision of educational policies are also vital solutions. Because all other professions depend on the education profession (Béteille & Evans, 2021), the issue of global teacher attrition is a growing problem that requires urgent attention.

Problems Around Staffing Shortages

The problem of staff attrition can be explored by studying its common causes, barriers to potential teachers, and the impacts on student learning and school operations. Common causes that have led to the shortages of educators include poor working conditions, lack of support, and inadequate compensation. The COVID-19 pandemic magnified several educational issues (Hingorani, 2023; Powell, 2024), with teachers reporting demanding and stressful environments characterized by unmanageable workloads (Bryant et al., 2023). In Manitoba, Canada, teachers' daily preparation time has essentially remained the same in recent decades, even though teachers are now obligated to spend significantly more time on technology-related communications with students, parents, and administration outside of instructional time than twenty years ago.[1] Verbal and physical harassment of educators is increasing, among other forms of poor student behaviour (See et al., 2024). Working conditions must be improved to create atmospheres conducive to learning and working for teachers and students.

Educators in various countries cite a lack of necessary support and resources to continue working in prolonged and challenging circumstances. Many teachers in the United States identify stress and a lack of support from their school or district leadership team as leading reasons for leaving their teaching positions in the public school system (Powell, 2024; See et al., 2024). Almost half of American educators described feeling “‘always’ or ‘very often’ feeling

[1] The uncited information in this article is from the author’s more than 25 years of experience as an educator in Manitoba, Canada.

burned out at work" in a Gallop survey conducted in 2022 (Rock, 2024, "K-12 Teachers" section, para. 1). Educational systems in Canada and Australia are also under resourced with inadequate and inequitable funding, leading to teachers feeling overwhelmed and demoralized (Hibbert, 2024; Mockler, 2022). A lack of support contributes to teacher attrition because it is unsustainable for teachers to remain in positions where they are continually overwhelmed and feel under-supported.

Inadequate financial compensation is a substantial reason many educators worldwide leave the profession. Qualified teachers in the United States currently receive 77% of the salary of workers from other professions that require post-secondary degrees (Darling-Hammond et al., 2023, p. 14). Fewer trained teachers are willing to work with the current wages (Powell, 2024). In the United States, 65% of school employees surveyed reported being unable to live with financial comfort from their earnings (Bryant et al., 2023, p. 7). Impacted by rising living costs in recent years, educators are motivated to leave the profession or positions with insufficient wages. Teacher shortages are caused by overwhelming work conditions, wherein teachers experience high levels of burnout due to lack of support, and in many cases inadequate financial compensation.

Some of the barriers to people's consideration of the profession include poor media portrayal, negative gender-role perceptions, and lack of community trust, leading to diminished status. The media has projected damaging stereotypes that have impacted the public's regard for educators. Media stories about Australian teachers are disproportionately negative in their representations, and teachers' work is often portrayed as "simple" binary decision making (Mockler, 2022, "Teachers' Work" section, para. 1). Job prestige has dramatically declined, and teacher bashing has become normalized in the United States (See et al., 2024). Young people are less likely to become interested in a profession wherein people are disrespected and depicted poorly. Additionally, those in the profession are less likely to remain with continued undesirable portrayal by the media.

Negative gender-role perceptions minimize the professionalism of teachers and exacerbate teacher attrition. Education is a female-dominated profession in which school employees are often regarded as "glorified babysitters" in Canada (Hibbert, 2024, "Teachers Seen" section, para. 4). Attrition rates are generally higher in male teachers because men have more employment mobility in some countries while women remain in lower-paying sectors (UNESCO & International Task Force on Teachers for Education 2030, 2023). The babysitting stereotype is further perpetuated because women have limited opportunities globally, and therefore continue to be central to the profession. The barrier of poor gender-role representations, particularly in countries with lower pay scales, compromises the status of current teachers and is a deterrent for others entering the profession.

A lack of community trust in educators contributes to teacher shortages in the United States (Khalilipour, 2024). As community members observe struggles within the educational system, they naturally lose confidence in its people. Additionally, the trend of limited trust continues with temporary replacements during periods of high staff turnover. Minimal trust leads to decreased parental involvement, further compounding the problem. The teaching profession's diminished status is attributable to negative media, gender-role stereotypes, and community mistrust.

Staffing shortages have severely impacted student learning and school operations. Student learning becomes more challenging and even compromised when staffing inconsistencies exist. Uncertified teachers are used to fill vacant positions in the United States, negatively affecting student performance and instructional quality (Bryant et al., 2023). In the 2023-2024 school year, École Carman Elementary School in rural Carman, Manitoba, Canada, experienced 120 days of being short-staffed after contacting all possible substitutes (V. Giesbrecht, École Carman Elementary School administrative assistant, personal communication, June 29, 2024). To provide further perspective, substitute teachers were needed for one to four elementary school classroom teachers each day. Classrooms become unsafe environments when classes are combined because substitute teachers are unavailable, leading to inadequate supervision

and discipline issues (Khalilipour, 2024). There is a disproportionate effect on students with special needs when specialists are reassigned, disrupting student routines and learning (Wong, 2023). The education of students becomes compromised when there are continued inconsistencies in staffing.

Teacher attrition is disruptive for school operations, making it challenging to have organizational stability and staff cohesion (Castro, 2023). Low-quality education perpetuates the cycle of educational inequalities (UNESCO & International Task Force on Teachers for Education 2030, 2023), significantly affecting student achievement and the functioning of schools. Teacher turnover disrupts school functions, complicating efforts to maintain consistency and encourage staff unity. The impact of staffing shortages on student learning and school operations has become drastic. Staffing deficits can be better understood by examining the common causes of teacher shortages, obstacles faced by prospective teachers, and their effects on student learning and school functioning.

Solutions to Staffing Deficits

To address the complex issue of teacher attrition, a broad scope of solutions must be considered, including financial incentives, improved working conditions, and supportive staff communities. Additional crucial solutions are effective recruitment practices and revision of educational policies. Financial incentives are part of the solution to the complex issue of staffing deficits. They consist of increased wages, targeted incentives for high-needs areas, and debt-free teacher preparation, and they have proven effective in retaining and recruiting educators (See et al., 2022, p. 97). Teachers' wages must be competitive to retain educators for the long term and to invest in new teachers (Rock, 2024; UNESCO & International Task Force on Teachers for Education 2030, 2023). Higher salaries are an incentive not only for those considering the profession, but also for individuals who have left the profession and may be financially motivated to return (Darling-Hammond et al., 2023). Increasing salaries would make the profession more attractive.

High-needs areas that are harder to staff become more appealing with additional, targeted incentives such as moving expenses, isolation pay, accelerated career advancements, and refundable tax credits (Béteille & Evans, 2021; Bryant et al., 2023). Some areas offer no-interest home loans or forgivable loans, and there is a program in the United States called the Educator Down Payment Assistance Act that contributes up to $25,000 towards a home down payment for teachers working in high-need schools (Darling-Hammond et al., 2023). Another consideration would be implementing financial bonuses for teachers of students exhibiting extreme behavioural challenges due to the extra stresses and time required for documenting behaviour, creating accommodations, and communicating behavioural updates with the support team. A five-year membership to the local golf club in a rural setting might be a creative solution that could appeal to potential candidates. Supplementary incentives may attract educators to areas facing increased challenges.

Debt-free teacher preparation options have tremendous potential to reduce teacher attrition. Possibilities include government-subsidized monthly student loan payments for working teachers, guaranteeing that all debt would be retired after 10 years of service (Darling-Hammond et al., 2023). A subsidization program of this nature would serve the dual purpose of recruiting teachers and retaining others. The education profession could become more appealing to potential teachers with the possibility of receiving post-secondary training without debt. Higher salaries, financial bonuses for high-needs areas, and debt-free training are economic solutions to draw more teachers to the profession.

Working conditions could be improved through reduced workloads with increased resources, strong leadership, and supportive staff communities. Educators' workloads can be lessened with easy access to instructional materials to support lessons. Increased professional development opportunities and resources for instruction also contribute to retention by better

equipping and motivating staff (See et al., 2022). In 2004, a broad reform of the public school system in Ontario revealed that fewer educators chose early retirement, and fewer young teachers withdrew from the system, when workloads were reduced, preparation time was increased, and class sizes were smaller (Hingorani, 2023). Teacher well-being is closely connected with the nature of the school environment (See et al., 2024). Therefore, healthy working conditions are paramount and are improved with manageable workloads and sufficient resources.

Strong leadership can positively influence the environment in which educators work. Effective leaders significantly impact teachers' workload and job contentment by providing resources and disciplining students who are misbehaving (See et al., 2024). Administrators must reinforce the Student Code of Conduct to maintain an atmosphere conducive to learning. To retain teachers and recruit new ones, effective leadership must establish manageable working conditions in their schools.

Supportive staff communities are central to maintaining a healthy school culture wherein all members contribute and are valued. Strong leadership and collaborative school culture lower attrition rates and increase job satisfaction (See et al., 2024). About 87% of educators who feel genuinely cared for by their co-workers acknowledge their colleagues for encouraging them to remain in the profession (Bryant et al., 2023, p. 7). New teachers benefit from high-quality mentoring whereby they are encouraged relationally while becoming better equipped professionally (UNESCO & International Task Force on Teachers for Education 2030, 2023). In the state of California, a mentorship grant exists whereby the state will match districts financially up to $4000 per year for each first and second-year teacher to be mentored (Darling-Hammond et al., 2023). Implementing divisional mentorship leaders could benefit newer staff who may have reservations about appearing ill-equipped to their colleagues if they were to reach out for help. Mentorship leaders would be a safe, supportive means to offer objective support and guidance. Schools with a supportive staff community have more success recruiting and maintaining long-tenured staff. Teacher attrition is reduced with improved working conditions that include reduced workloads with increased resources, effective leadership, and a supportive staff culture.

Strengthened recruitment practices would contribute to greater effectiveness in obtaining teaching staff. School systems could benefit from nontraditional methods to fill staffing vacancies by partnering with recruiting agencies such as ZipRecruiter (Rock, 2024). Amergis is an educational staffing firm in the United States that has over 70 teams who helped more than 2 000 schools fill school vacancies in the 2023-2024 school year (Amergis, 2024, "Dedicated" section, para. 3). Grow Your Own (GYO) programs train candidates from the local community who are more likely to commit to staying in the long term, helping to provide staffing stability (Powell, 2024). Another recruitment approach is promoting teaching as a vocation through teacher apprenticeship programs, some of which include residency models (Darling-Hammond et al., 2023). Students can learn and earn simultaneously, making the career path more accessible to a broader range of potential candidates. Second-career teachers are another solution to staffing shortages because they have life experience and a level of maturity that could help them succeed in challenging educational settings (White et al., 2024). School systems must pursue and increase effective recruitment practices to attract teaching staff.

Educational policies need to be revised to create positive changes in the system. To develop effective reform strategies, teachers must begin with the end in mind and be included at the policy table (Hibbert, 2024). Their voices are central to reforming policies because they have first-hand views of the needs of students. In Newfoundland and Labrador, for example, educators were invited to participate in a "Teacher Think Tank" (Wong, 2023, Seeking Solutions section, para. 6), wherein they could share suggestions for solutions with policymakers. To drive change, people must work together to think about the overall vision of the educational system and consider how current approaches need to be reformed or discarded (UNESCO & International Task Force on Teachers for Education 2030, 2023). Teachers' voices are essential

to revising educational policies alongside other stakeholders, to bring about relevant improvements to the effectiveness and long-term viability of the educational system. Solutions to minimize the multifaceted problem of staffing shortages are financial incentives, improved working conditions, and supportive staff communities. Additionally, strengthened recruitment practices and a revision of educational policies are to be considered and implemented.

Conclusion

It is critical to address the problem of teacher attrition because education is the foundation for all other professions. From examining the common causes of staffing deficits, barriers faced by potential teachers, and the impacts on student learning and school operations, the problem of teacher shortages can be better realized. The complex issue of staffing deficits requires a multifaceted approach to move towards resolution. Solutions that must be considered are financial incentives, improved working conditions, and supportive school communities. Strengthened recruitment practices and reformed educational policies are vital approaches to reducing staff vacancies. In order to move from shortages to solutions, stakeholders worldwide must work together to resolve the urgent issue of teacher attrition.

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Coreen Johnston, a dedicated educator with more than 25 years of experience, is pursuing her Master of Education, specializing in educational administration. Having worked with students from K-8 as a classroom teacher, English language development specialist, student support teacher, and vice-principal, Coreen is passionate about supporting others through her commitment to family, faith, and community.

Teacher Mental Health and Well-Being: Time To Make It a Priority

Jalynn Albrecht

Abstract

Teaching is an exceedingly demanding profession, yet teacher well-being is often neglected in favor of focusing on student mental health. Educators face significant levels of stress, ranking among the top professions for poor mental health and job satisfaction, which impacts both teacher and student success. Addressing teacher mental health requires systemic change, with collective responsibility from governments, communities, schools, and individuals. Small, intentional improvements at all levels can have a significant impact. Just as it "takes a village to raise a child," it also takes a village to care for teachers, ensuring the well-being of both educators and students. The author's professional experiences provide real-life examples to enrich information drawn from the literature.

It is no secret that stress comes with the territory in regards to teaching. Mental health has been a major focus in the educational world for some time now. However, most of that focus has been centered around the students. Teacher mental health and well-being should be equally important, because teaching "is among the top six professions for poor physical health, psychological well-being, and job satisfaction" (Black & Halstead, 2021, p. 478) and if teachers are not well, it is likely their students will not be either. Educational professionals are passionate and caring individuals who deserve a work environment that supports their well-being. Teacher mental health and well-being should be championed by everyone at every level: government, community, school, and individual. This article makes teachers the priority, reinforced by my own professional experiences.

Challenges to Teacher Mental Health and Well-Being

Many job demands contribute to poor teacher mental health and well-being, such as workload, negative views of the profession, and multiple roles (Kim et al., 2022). Other factors to consider are the COVID-19 pandemic, student behaviour, and increasingly diverse classrooms. According to the Teacher Wellbeing Index 2018 done by the Education Support Partnership, "57% of educational professionals considered leaving the sector over the previous two years" (Stones & Glazzard, 2020, p. 14), a frightening number when considering what it could mean for the future of education.

The state of teacher mental health should be of concern for everyone in education because stress is often passed on from the top down, starting with division leaders and ending with students (Stones & Glazzard, 2020). I began my teaching career in September 2020, and by September 2021 I had started seeing a therapist on a regular basis. I worked in three different schools, in three different towns, in three different divisions, in four years. As an already anxious person, it did not take me long to realize that I was going to need support for my own well-being. The 2018 Teacher Wellbeing Index found that "1/3 of educators felt stressed with their jobs; 56% reported experiencing insomnia, 51% experienced depression, and 50% experienced anxiety" (ESP, 2018, as cited in Stones & Glazzard, 2020, p. 5). Although alarming, these statistics are unsurprising and have likely only increased. It is time that educators share the focus of mental health because we know that teachers who are mentally well flourish in the classroom environment and are better equipped to support students (Stones & Glazzard, 2020). Investing in student well-being requires an investment in teacher well-being.

Choosing to become a teacher, means choosing a career that has no off switch: "teaching is all encompassing" (Stones & Glazzard, 2020, p. 12). The job demands often feel relentless and can make it very difficult to have a proper work-life balance. The demands, challenges,

pressures, and lack of resources that teachers have faced over recent years have negative implications for mental health and well-being: “stress and anxiety, exhaustion and a lack of feeling valued as a profession” (Kim et al., 2022, p. 312). Additional factors found to contribute negatively to teacher well-being include increased stress caused by the COVID-19 pandemic (Gadermann et al., 2023), cultural diversity, concern over appearing racist (Holscher et al., 2024), challenges of working with students with severe and profound multiple learning difficulties, juggling multiple relationships (Black & Halstead, 2021), and “expectations to compensate for societal problems” (Stones & Glazzard, 2020, p. 1). Most teachers enter the profession because of a passion for learning, children, and making a difference. Entering this profession should not come at the expense of health.

The educational world is complex and constantly evolving, and if teacher mental health and well-being are not at the forefront, education as a whole will suffer. Following the COVID-19 pandemic, 41% of teachers reported that they may contemplate leaving the career (Gadermann et al., 2023, p. 8). Many of the challenges that educational professionals face today are not going anywhere, especially the unrelenting job demands. Staff mental health and well-being needs to be prioritized alongside student mental health and well-being (Black & Halstead, 2021). Continuing to put teacher mental health and well-being on the backburner will have a ripple effect, because self-doubt and higher stress levels will likely have a negative impact on student-teacher connections (Holscher et al., 2024). Taking care of students requires taking] care of their teachers. Struggling with mental health is not a sign of weakness, but rather a sign that things need to change. A change is needed in the educational system and within schools so that teachers are able to thrive (Stones & Glazzard, 2020). The silver lining is that big impacts do not always require big changes.

Suggestions To Reinforce Teacher Mental Health and Well-Being

For teacher mental health and well-being to be effectively supported, it needs to be made a priority in all capacities. However, it is not enough to simply brainstorm potential solutions and quick fixes for this problem. Helping to build teacher resilience is important, but the constantly evolving environment teachers are working in should not be overlooked in this process (Hartcher, et al., 2023). Making real change involves considering solutions (and the potential barriers) at each level in the educational context. It is necessary to explore possible solutions to the problem of poor teacher mental health and well-being from all angles, and while the job demands are not going anywhere, lifting can be done to lighten the load.

When thinking of educational priorities, often what comes to mind is literacy and numeracy. This is also usually what the government chooses to prioritize, and what the government chooses to prioritize is typically what school divisions (and therefore school leaders) prioritize. At the government, community, and school levels, teachers’ experiences with mental health in the workplace are “topics worthy of incorporating into efforts to promote teacher effectiveness” (McLean et al., 2023), because teaching effectively requires effort and energy, two things that are difficult to muster when struggling with poor mental health. Investing in policy and practice that values teacher well-being has the potential to result in better recruitment, retention, and improved student learning (McLean et al, 2023). For a systemic change to be made, it is necessary to start at the top. Teacher well-being needs to be understood as a collective responsibility within the educational system in order for positive, lasting change to occur (Hartcher et al., 2023).

Teachers are told to “remember our why.” The message is to encourage teachers to remember why they chose this] career path despite the many challenges that accompany it. The “remember” message has good intent but has been backed by no tangible support and consequently is often met with an eyeroll. Despite its overuse, there is legitimate importance behind this concept. Remaining aligned with our core values and reasons for choosing to become educators in the first place creates space for an intentional approach to facing the

demands of the job (Price, 2019). Knowing and understanding core values is essential to understanding tolerance, because “you will be able to establish what it is about yourself that you will not compromise in order to survive the emotional storms you will weather in your commitment to teaching” (Price, 2019, p. 9). Daily reflection about the “why” could prevent teachers from losing themselves in the job.

As a new teacher, finding a good work-life balance can be especially difficult. I distinctly remember a senior teacher applauding me for staying at work until 6 or 7 p.m. in my first year because it “demonstrated a good work ethic.” At the time I felt validated that I was doing the right thing, but I now realize how unsustainable and problematic that narrative was for me. New teachers are realizing how vital it is to prioritize mental health and well-being. Instead of pouring everything into work to avoid seeming lazy or less committed, the new wave of teachers are going to act as the main characters in a much-needed cultural shift towards mentally healthier schools (Price, 2019).

There are many actionable ways teachers can support mental health and well-being at the individual level. Regular intentional breaks, drinking plenty of water, getting outside, and being active during the work day can have a big impact over the way teachers feel about their work (Price, 2019). Teachers are also frequently told how effective “modelling” is. In this sense, teachers’ focusing on their own mental health and well-being is a powerful way to teach students how to do the same for themselves. Highlighting the importance of seeking support as a strength will help teachers to access it, will enable others to help when appropriate, and will encourage young people to help themselves (Price, 2019). It is time for teachers to care for themselves the same way they care for their students.

One area that could be improved in the context of my own school is the stress and anxiety over current inclusive education policies. For a small community, we have a surprisingly diverse student population and many of our teachers become overwhelmed by the challenges that attend inclusive practices. Our leadership team communicates expectations around these practices. However, more targeted training to help teachers better understand the needs of our students would likely increase confidence and decrease stress and anxiety (Gray et al., 2017). As the primary/middle school resource teacher, this is also an area wherein I have the potential to help our teachers.

A few other solutions I believe could make a positive improvement in our building include sending out the upcoming annual calendar to staff before the summer break, encouraging teachers not to have work emails on cellphones, and implementing a 48-hour reply standard for non-urgent parent communication (Sayer, 2021). Additional solutions that could work in any school are encouraging staff to leave go home before 5:00 p.m., so as to promote the importance of work-life balance, encouraging every teacher to volunteer for an extra-curricular activity to help share the load, implementing staff exercise classes before or after school, providing snacks during staff meetings, and requiring that break times be breaks for teachers as well as students. I believe these solutions would be effective because there is minimal cost, they are easy to implement, and they have the added benefit of teachers’ feeling that the school leadership team values boundaries and teacher well-being.

When considering some possible solutions to the problem of poor teacher mental health and well-being in my own work environment, I realize I am one of the lucky ones. Our school leaders are kind, approachable, and supportive. An obvious factor impacting teacher mental health and well-being is the school environment. A school environment that promotes community support and involvement by valuing mental health and well-being will have a long-lasting and positive influence on teachers and students alike (Gray et al., 2017). The school community I work in is a generally positive one. However, there is always room for improvement. I look forward to helping make these improvements, not only for myself but for my colleagues and students as well.

Conclusion

Teaching is not for the faint of heart. While it is honourable always to put students at the forefront, it is a disservice to everyone to sacrifice teacher mental health and well-being in the process. Relentless job demands may come with the territory, but a helping hand to lighten the load can go a long way. Attacking the issue of poor teacher mental health and well-being from a systemic approach is the best way to ensure meaningful change will occur. Taking responsibility and making small changes at every level in the educational context will make a massive impact overall. Just as it "takes a village to raise a child," it takes a village to care for those who care for a child.

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About the Author

Jalynn Albrecht is currently pursuing a Master of Education in inclusive education to enhance her skills as a resource teacher. Upon return from maternity leave, she will be continuing as a resource teacher for grades 2-7 at Boissevain School in Manitoba, Canada. Jalynn is passionate about inclusive practices and creating a successful educational environment for all.

OPINION PAPER

Employment of International Students in Canada

Jiake He

Canada needs talented international students with the right skillsets to address the gap between market demand and labor shortages. As one of the most popular destinations for overseas study, Canada has the advantage of leveraging international students as ideal young workers to replace an aging workforce. However, it can be extremely hard for international students to find suitable jobs. Many are forced to take jobs that do not utilize their full range of skills. Photos of long lines of students standing outside shops and restaurants for positions such as cashiers or waitstaff are widely seen on social media. Why do international students face difficulties entering the professional workforce in Canada? This paper explores cultural challenges, language barriers, and policy impacts facing international students who seek meaningful employment – and offers potential solutions.

International students face challenges as they navigate the new culture when applying for positions. In a job interview, for instance, international students may answer questions in unexpected ways as a result of cultural differences. Their unfamiliarity with Canadian cultural norms may lead to stresses and anxieties, which may affect their interactions with employers and their ability to network. To handle cultural challenges, international students should seek chances to learn more about Canadian culture. For example, they can participate in volunteer work, which would enable them to communicate with local people and familiarize themselves with Canadian workplaces. Universities could provide training workshops and mock interviews to help international students learn the Canadian work expectations. Government agencies could take more responsibility to inform employers of the benefits of a multicultural working environment and encourage them to hire international students. With the knowledge that cultural differences promote innovation and creativity, employers would have fewer concerns and be more willing to hire international students.

Besides cultural challenges, language barriers are a key difficulty faced by international students in the job seeking process. In a job interview, for instance, if an international student can answer the questions well but is not fluent in English, it is hard for them to explain their ideas clearly. They cannot show their talents to the employer and, as a result, risk losing the job opportunity. To solve this problem, international students should try to master English. Training programs and opportunities to learn and practise English are urgently needed. Universities should provide more English language support for international students, including courses, tutoring, workshops, or conversation programs. Government agencies could offer financial assistance to make language supports more affordable for students and financially viable for universities. Companies and organizations could also offer some language training programs based on their specific needs, such as English for particular professions. This could improve international students' work efficiency and communication skills, and team performance would be enhanced.

Furthermore, international students face policy impacts when looking for a job. Immigration policies in Canada are complex and sometimes confusing. The post-graduation work permit is an example. As of September 2024, if a student studies more than 50% of their program online, they may not be eligible for a post-graduation work permit. Employers may be reluctant to hire international students because of the risk that they might be hiring an illegal worker. To solve the problem of policy impacts, the federal government could make its policies clearer and more predictable. For example, by announcing policy changes at the beginning of each year the government can inform employers and international students, which will allow them to adjust

accordingly. In addition, the government could help international students and employers by raising awareness of the new and different policies. Universities could provide opportunities to connect international students with relevant government departments to help them know more about policies. The government could even adjust its policies to encourage employers to hire international students. In this way, when preparing to enter the workforce, international students will have more chances to find a suitable job.

To summarize, international students face numerous challenges when seeking meaningful employment. From cultural challenges to language barriers and policy impacts, addressing these problems requires concerted efforts from various levels of the government, higher education institutions, employers, and international students themselves. Through collaboration between various stakeholders, international students can be correctly positioned in society, which will benefit the economy and make Canada a better place for all of us.

About the Author

Jiake He is a Master of Education student in the educational administration stream at Brandon University. She worked at a university in China and dealt with many legal affairs during her 10-year career. Her research interest is in various topics in higher education.

CELEBRATION OF SCHOLARSHIP

We are honoured to recognize the following students who defended M.Ed. theses in 2024.

Lynn Cliplef January 31, 2024 Thesis Supervisor: Dr. Jaqueline Kirk

From Industry to Instruction: Transitioning from Industry to the Vocational Classroom

This study explored the experience of novice trades instructors as they transitioned from their roles in industry to teaching in a vocational institution. In vocational institutions, instructors are often hired for their industry knowledge and their practical skills rather than their teaching experience or knowledge. Using a qualitative approach, this study explored the experiences of three novice instructors through long-form interviewing. By examining the experiences of the instructors, factors that are supportive of a successful transition to the classroom were identified, including mentorship and a strong orientation toward teaching that supports motivation and perseverance. Participants also described factors that acted as barriers to their transition to the classroom, including tensions between the academic nature of the institution and the practical nature of the applied trades. The findings of this research can be used by vocational institutions that support the transitions of trades instructors hired directly from industry as well as by the teaching and learning centers that support the development of their teaching skills.

Valerie McInnes February 1, 2024 Thesis Supervisor: Dr. Cathryn Smith

What is keeping teachers in the profession? A study of the influencers of teacher retention with a focus on educational leadership

Teacher retention continues to present challenges within the education system. Rural Manitoba is not exempt. There are many risk and protective factors that influence a teacher's decision to remain in the profession. This research explored the lived experience of early service teachers, how the risk and protective factors encountered by teachers impact their experience, and if the educational leadership within their schools/divisions has any impact on their decision to remain in the profession.

Through a phenomenological methodology, an initial survey was presented to both teachers and administrators. The second stage of the qualitative research was semi-structured interviews with teachers who agreed to move forward in the research.

Analysis of the research literature and research data brought forward several common influential factors between the stories told by the interview participants. At the top of the list was the resiliency shown by teachers through the multitude of challenges that teachers, across the profession, face each day. The literature also indicated that educational leadership had a crucial role in the experience of early services teachers. Through this study, the direct impact of educational leadership was not decisive; however, teachers presented a clear picture of what kind of leader they hoped to work with.

This research study shows that there are improvements that can be made at all levels to support the retention of teachers throughout their careers. Through professional development, mentorship, induction processes and intentional support, we can hope to move in a positive direction to improve retention and recruitment of quality teachers.

Eva Eberts March 26, 2024 Thesis Supervisor: Dr. Cathryn Smith

Coaching French Immersion Teams: A Case Study

While there is much literature on the relationship between quality of instruction and student achievement, there is noticeably less on the influence of coaching on the collective inquiry process. Collaborative teacher team research discusses implementation, data analysis, efficacy, and team function. This research aimed to identify the most effective strategies to coach teacher teams through collaborative inquiry cycles, through three specific research questions: What coaching strategies support teacher learning during collaborative inquiry cycles? How does the coaching of collaborative inquiry cycles change over time? How do the perceived impacts of specific coaching strategies impact the self-efficacy of the coach? This instrumental case study is an analysis of the researcher's lived experience as a coach of five French Immersion teacher teams between September 2019 and January 2020. The data sources included the researcher's journal entries as team coach, entrance and exit slips for each meeting, and self-efficacy survey results. Data analysis incorporated a combination of structural manual coding, in vivo manual coding, and manual pattern coding. Categorical aggregation applied in the last step of analysis identified two clustered themes: strategies that foster community and collaboration and those that support capacity building. Challenges in the diverse dynamics of the teams in this study required the coach to pivot frequently as the efficacy of selected strategies were assessed. The results of this reflective inquiry were used to construct a model of effective coaching of French Immersion teacher teams including tools designed to assess team effectiveness.

Heather McCormick June 20, 2024 Thesis Supervisor: Dr. Heather Duncan

A Study of Trauma and Retention in Indigenous Adult Learners

The primary purpose of this research study was to investigate the levels and types of trauma experienced by Indigenous adult learners, the frequency of these traumas, and their impact on educational success. By doing so, the research sought to identify support mechanisms perceived as most beneficial by Indigenous adult learners.

The significance of this study lies in its potential to inform educators, administrators, and policymakers about the extent of trauma's impact, guiding the development of effective support systems and interventions tailored to the needs of Indigenous learners.

The study was grounded in an Indigenous research paradigm, emphasizing relational accountability and purpose, which are integral to Indigenous ways of knowing. This approach ensured that the research was conducted respectfully and ethically, aligning with the values and methodologies of the Indigenous community. The research employed a mixed-methods approach, integrating both quantitative and qualitative data collection to provide a holistic understanding of the trauma experiences of Indigenous adult learners.

Quantitative data on trauma and Indigenous adult learners' experiences was collected from questionnaires completed by students during intake interviews and from data on potential trauma experiences shared with support staff during their program placement, subsequently documented in a dedicated student database. Additionally, three narrative interviews were conducted to gather qualitative insights.

The data indicates that a majority of the students had experienced trauma, with many having multiple traumatic experiences throughout their lives. Nearly all students reported at least one potential trauma indicator, with a significant portion identifying multiple traumas. The distribution of potential trauma indicator ranges varied, with substantial numbers of Indigenous adult learners reporting higher PTI counts. Common types of trauma included adverse adult and childhood experiences, justice issues, involvement with child welfare agencies, chronic health issues, and various forms of violence and abuse. The findings also highlighted the profound resilience exhibited by Indigenous students in the face of these challenges, underscoring the need for resilience-building initiatives within educational programs.

The research emphasized the necessity of trauma-informed, culturally safe, community-based, and Indigenous-led education programs to support the academic and personal success of Indigenous adult learners. The findings from this study have significant implications for educational institutions, particularly in supporting Indigenous adult learners who face extreme levels of trauma.

The report outlines the challenges and successes experienced by Indigenous adult learners, and points to broader implications for educational practices and policies. The research results emphasize the importance of a holistic approach to education for Indigenous adult learners—one that is trauma-informed, culturally sensitive, and supportive, facilitating not just academic success but personal healing and growth. The significance of this study lies in its potential to inform educators, administrators, and policymakers about the extent to which trauma affects Indigenous adult students.