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Editorial

Valerie Triggs and Gale Russell, *University of Regina*

The winter issue for 2025 conveys the work of authors who are passionate about improving the well-being, mental health, and engagement of students as well as supporting the commitments of teachers and community programs for doing so.

Maria Fjærestad and Constantinos Xenofontos share research data from a case-study involving semi-structured interviews with eleven teachers regarding the integration of digital tools in Norwegian primary school mathematics classrooms. Their article, *Digital Tools in Mathematics Classrooms: Norwegian Primary Teachers' Experiences*, highlights ways in which digital tools enhance mathematics instruction through increasing student engagement and augmenting differentiated learning while also noting various challenges and limitations that arise in the practical realities that teachers encounter.

In their article title, *Pathways to Healing and Thriving: Culturally Responsive Mental Health Programs for Black Youth in Toronto*, **Marcella R. J. Bollers and Ardavan Eizadirad**, provide research findings from surveys and focus groups with 55 racialized youth who attended education programming offered by a non-profit organization, Generation Chosen, that aims to support under-resourced Black youth with mental health, emotional intelligence, as well as civic engagement. Using Critical Race Theory, the authors provide an analysis and synthesis of improvements to life skills, fostering of identity development, and enhanced coping mechanisms, through the youths' participation in the organization's culturally responsive and trauma-informed guidance and mentorship.

The third article in this issue is written by **Jane P. Preston** who provides an extensive literature review regarding educational experiences of international students enrolled in postsecondary institutions in the countries that are currently hosting the largest international populations: Canada, the United States, the United Kingdom and Australia. In this article titled *Experiences of International Students in Postsecondary Education: A Literature Review*, key findings are shared regarding influences that promote well-being and academic success of international students. These findings include student capacity for English proficiency, navigating and adapting to unfamiliar pedagogical approaches, as well as issues of acceptance, integration, and discrimination. Preston's review generates important observations regarding educational experiences that constitute barriers or discomforts for students, as well as recommendations for improvement and for areas of future research.

Michael Link and Will Burton share their research article, *Teacher Perceptions of Teachers for Education for Sustainable Development: Before and During the COVID-19 Pandemic*. Possibilities for Education for Sustainable Development (EDS) have been narrowed due to the pandemic's unpredictable learning environment that shifted back and forth between online and in-person contact, as well as its lack of opportunities for field trips and social interaction. Using semi-structured interviews with 12 teachers who integrate sustainability education into their teaching practice the authors found that the pandemic made teachers more aware of the central role that schools play in supporting social, emotional and academic well-being in youth, a role that may have previously been underestimated. The two authors also found that, despite difficulties in designing deep and immersive experiences as teachers had done prior to the

pandemic, teachers remained determined to put Education for Sustainable Development foremost in their teaching and in their classrooms.

Our book review for this issue is written by **Donna H. Swapp & Adeola S. Amos**. This review provides a thoughtful and detailed response to the 2023 Canadian Scholars book by Ranjan Datta, titled *Decolonization in Practice: Reflective Learning from Cross-cultural Perspectives.* Swapp and Amos share how this edited book emphasizes individual responsibility for seeking knowledge about the places and spaces one occupies, as well as the collective responsibility of decolonization. The contributors to the edited book write from the perspectives of Indigenous peoples as well as from those of Black, Asian and European communities. As with the other authors in this issue Swapp and Amos elucidate challenges and commitments towards teaching and learning, and what these might mean for educational practice that promotes healing and co-flourishing with mutual respect and understanding. They recommend this book to *in education* readers.

We hope you enjoy this winter issue as you patiently wait for the coming arrival of spring.

Digital Tools in Mathematics Classrooms: Norwegian Primary Teachers' Experiences

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Abstract

This article explores the integration of digital tools in Norwegian primary school mathematics classrooms, focusing on teachers' experiences. With the increasing use of technology in education, digital tools have the potential to enhance mathematics instruction by enabling personalised learning, increasing student engagement, and offering dynamic ways to visualise mathematical concepts. However, these tools also present challenges, such as the potential for student distraction and a lack of teacher confidence in using technology effectively. Using a collective case-study approach, we conducted semi-structured interviews with eleven mathematics teachers to examine how digital tools impact student learning, instructional practices, and the nature of mathematics education. The findings reveal both the potential of digital tools to foster differentiated learning and their limitations, including concerns about over-reliance on technology and difficulties in maintaining classroom focus. This study contributes to the ongoing conversation about digitalisation in education, offering insights into the practical realities teachers encounter and recommendations for optimising the use of digital tools in mathematics classrooms.

Keywords: digital tools, teachers' experiences, didactical tetrahedron, Norway

Introduction

The growing integration of digital tools into education has gathered considerable attention worldwide, particularly as technology assumes an increasingly central role in classroom practices. The Nordic countries of Norway, Sweden, Denmark, and Finland have been frontrunners in adopting digital tools for education, with government policies strongly advocating for technology integration in daily teaching (Olofsson et al., 2021). In Norway, which is the focus of the present paper, this emphasis is reflected in policy documents such as the mathematics curriculum (Kunnskapsdepartementet, 2019) and the national strategy for digital competence and infrastructure in kindergartens and schools (Kunnskapsdepartementet, 2023). As indicated by recent findings from the Programme for International Student Assessment – PISA (OECD, 2023), Norwegian students use digital tools more frequently than their peers in any other country. This is perhaps unsurprising given that over 90% of students in years 1 to 10 (ages 6 to 16) are provided with digital devices by their school districts (Amdam et al., 2024). However, Norwegian teachers' levels of professional digital competence vary significantly. Also, despite the growing body of Norwegian literature examining the digital competence of prospective teachers (e.g., Tveiterås & Madsen, 2022), practising teachers (e.g., Folkman et al., 2023), and teacher educators (e.g., Lindfors et al., 2021) from a general education perspective, far less work has been undertaken specifically within the context of mathematics education.

This study focuses on the experiences of primary school teachers in Norway as they contend with this evolving digital landscape in relation to school mathematics. Teachers are instrumental to the success of digitalisation initiatives, as they bear the responsibility of incorporating technology into their instructional methods and ensuring it supports rather than detracts from student learning. The effectiveness of digital tools is thus closely linked to how teachers perceive and use them. If teachers lack confidence in these tools or view them more as distractions than assets, the potential benefits of technology may not be fully realised (Loong & Herbert, 2018). Therefore, understanding teachers' experiences is essential for evaluating the actual impact of digital tools on mathematics education.

Three key questions guide our work, focusing on teachers' experiences and perspectives. Each question should be read as beginning with "According to teachers, …"

- RQ1: In what ways do digital tools impact students in the mathematics classroom?
- RQ2: In what ways do these tools affect teachers and their teaching practices?
- RQ3: In what ways do digital tools reshape the nature of mathematics as a subject?

The work presented here is significant for its potential to inform teachers, policymakers, and researchers about the practical realities of integrating digital tools into mathematics education. While the theoretical benefits of digitalisation are widely acknowledged, a deeper understanding of teachers' everyday experiences offers a more nuanced perspective on how technology affects teaching and learning. This study focuses on the views of those directly involved in the classroom, aiming to provide practical recommendations for optimising the use of digital tools in mathematics education. In the following pages, we first review relevant academic literature to provide context for the study. Then, we outline the research methodology, key findings, discussion, and implications.

Digital Tools in Mathematics Education

Meirbekov et al. (2022) describe digital tools as resources and services used in the educational process to develop key competencies such as critical thinking. These tools include online platforms that enable the creation of tests, logical tasks, real-time collaboration, and the visual presentation of information. In the context of mathematics education, Loong and Herbert

(2018) broaden the definition to encompass both physical devices and digital learning resources, such as tablets, computers, and educational games. For the purposes of this article, we use the term 'digital tools' to refer to both technological devices and learning software. The use of digital tools has grown significantly, particularly in mathematics classrooms, where traditional methods are increasingly supplemented or replaced by tablets, smartboards, and computers (Kunnskapsdepartementet, 2023). These tools, including tablets and software such as GeoGebra[1], Excel, computer algebra systems (CAS), and various dynamic geometry software, support students with complex operations and enhance their understanding of concepts. This shift enables students to explore and manipulate mathematical ideas that were previously difficult to visualise without the use of technology (Swensen, 2014).

Research on integrating digital tools in Norwegian schools and beyond stresses both their potential benefits and the obstacles they may present. One advantage lies in adaptive learning platforms that tailor activities according to students' progress, offering personalised support in subjects such as mathematics (Swensen, 2014; Viberg et al., 2023). Digital resources open up possibilities for deepening conceptual understanding. For instance, software like GeoGebra enables students to explore geometric and algebraic ideas interactively, fostering stronger engagement and insight (Kunnskapsdepartementet, 2019; Swensen, 2014). Meanwhile, adaptive platforms respond to students' progress by adjusting task difficulty and providing immediate feedback, allowing each learner to work at a level that challenges them appropriately (Kunnskapsdepartementet, 2023; Viberg et al., 2023). In addition, digital tools can significantly increase student engagement. Educational games and interactive simulations are particularly effective at capturing students' interest, making learning mathematics more enjoyable and immersive. When learners are more engaged, they are more likely to participate actively in lessons and perform better academically (Deater-Deckard et al., 2013; Fadda et al., 2022).

Despite these promising attributes, studies highlight challenges that can compromise the potential of digital tools. One recurring concern is distraction, as devices may lure students into non-academic activities and undermine concentration on mathematical tasks (Klette et al., 2018). While these tools offer opportunities for interactive learning, they also present temptations for students to disengage from the lesson, for example by browsing social media or playing games (Bergdahl et al., 2020). This challenge mirrors international findings, where teachers grapple with similar issues in tech-rich classrooms (e.g., Hennessy et al., 2007; Loong & Herbert, 2018; McCulloch et al., 2018). In addition, many teachers, in Norway and elsewhere, feel ill-prepared to harness technology fully, often reverting to traditional methods due to insufficient training and limited confidence (Kunnskapsdepartementet, 2023; Madsen, 2020; Munthe et al., 2022). Some also remain cautious about overreliance on technology, stressing the importance of pen-and-paper methods in developing core mathematical skills (Kunnskapsdepartementet, 2019; Marpa, 2021). Finally, many teachers hold beliefs that an overreliance on technology may weaken students' abilities to perform basic calculations and solve problems independently of digital aids (Beck, 2016).

Theoretical Framework: The Didactical Tetrahedron

Traditionally, educational theory has concentrated on the interaction between three core components: the teacher, the student, and the content (Mølstad & Karseth, 2016). These three components form the vertices of the well-known *didactical triangle*. More recently, in recognising the complexities of classroom realities, scholars have visualised these components in a three-dimensional shape (known as *the didactical tetrahedron*) by adding a fourth vertex,

[1] https://www.geogebra.org/

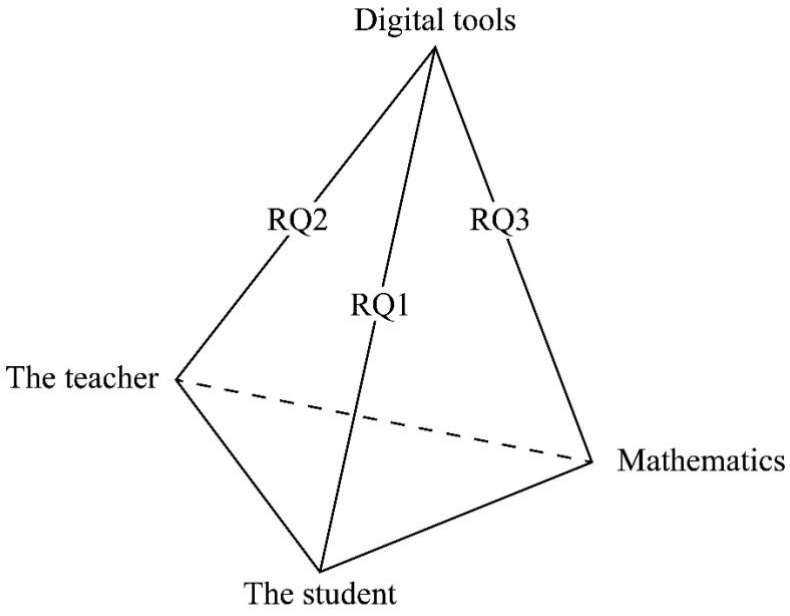
representing artefacts—namely, the materials or tools used in the classroom (see Goodchild & Sriraman, 2012; Jukić Matić & Glasnović Gracin, 2016; Rezat & Sträßer, 2012). In our work, we build on the ideas of Ruthven (2012), who encourages us to regard digital tools as a type of artefact. From this perspective, the didactical tetrahedron provides a robust and comprehensive framework for analysing how digital tools shape and transform the teaching and learning of mathematics. This approach recognises the significant role that digital tools play in mediating and reshaping relationships between teachers, students, and mathematical content. Within this expanded framework, technology is not merely a supplementary tool but an active agent that influences the nature of these interactions. For instance, technology enables teachers to present mathematical content dynamically, using tools such as dynamic geometry software to visualise abstract concepts in real time. This approach can enhance student engagement by creating more interactive and exploratory learning environments. Moreover, digital tools allow students to interact with content in novel ways, fostering deeper conceptual understanding through manipulation and experimentation.

This framework involves various relationships (Ruthven, 2012). The teacher-technology dynamic is crucial in enhancing instruction, enabling teachers to communicate content, deliver lessons, and facilitate interactive learning experiences. Teachers must continually develop their ability to manage and integrate these resources into their pedagogy. Similarly, the student-technology relationship encourages exploration, discovery, and a deeper understanding of content. Whether students engage with technology independently or under guidance, it offers them different levels of control over their learning. The content-technology interaction transforms static content into dynamic forms that can be manipulated, visualised, or simulated, greatly enriching subjects such as mathematics through tools like dynamic geometry software. Although the teacher-student relationship remains central, technology redefines this connection, positioning teachers more as facilitators who guide students through independent explorations using technological tools.

Thus, the didactical tetrahedron serves as a valuable heuristic for examining both the potential benefits and challenges posed by digital tools in mathematics education. On the one hand, it identifies opportunities for creating more student-centred, investigative learning environments. On the other, it highlights the need for teachers to adapt their pedagogical strategies to effectively integrate technology into their instructional practices. By considering technology alongside the traditional elements of the learning environment (i.e., teacher, student, content), this framework ensures a holistic approach to understanding the evolving nature of mathematics education in the digital age. Interestingly, while Ruthven (2012) provides an extensive discussion on the didactical tetrahedron and its components, he does not provide any visual representation of it. For this reason, Figure 1 provides an illustration of how we interpret Ruthven's ideas and the relevance of the framework to the research questions in this study, as outlined earlier in the introduction.

Figure 1:

The Didactical Tetrahedron (Ruthven, 2012).



This Study and Its Methods

This paper draws on data from the master's thesis of the first author, under the supervision of the second author. The study adopts a collective case-study methodology (Goddard & Foster, 2002), an approach grounded in the premise that understanding selected cases can provide deeper insights and potentially contribute to improved theorisations of a broader range of cases (Stake, 2005). Here, we focus on the collective case of a group of eleven teachers working in the same school. Nevertheless, to emphasise the importance of acknowledging individual voices, participants were encouraged to share personal experiences as primary mathematics teachers, in keeping with the narrative research approach seen in other studies (e.g., Kaasila, 2007). Narrative research seeks to explore how participants construct stories to make sense of their professional worlds, aiming to foster honesty and trust between the researcher and participants by prioritising the voices of individuals (Litchman, 2013).

Context and Participants

Despite the wide digitalisation of Norwegian schools (Amdam et al., 2024), not all schools in the country use digital tools in the same way, as their integration depends on several contextual factors. Variations arise from differences in regional and municipal funding, which influence the availability of technology and infrastructure (Rohatgi et al., 2021). Individual schools also exercise autonomy in selecting and implementing digital tools, leading to diverse approaches tailored to their specific educational goals (Ottestad, 2013). Furthermore, disparities in teacher training and digital competence create inconsistent usage patterns, with some teachers leveraging technology extensively for pedagogical purposes while others limit it to administrative tasks (Krumsvik, 2006). These variations are further amplified by differences in leadership priorities and the unique needs of each student population, resulting in a non-uniform adoption of digital tools across schools (Ottestad, 2013; Krumsvik, 2006). Despite

Norway's high ranking in digitalisation, such differences highlight the ongoing challenges of achieving equitable and effective use of technology in education (Amdam et al., 2024).

This study involved eleven teachers working in the same primary school (covering years 1-7, ages 6-13), where digitalisation has been widely embraced, in a southeastern town in Norway. Following the 2010 generalist teacher education reform (International Association for the Evaluation of Educational Achievement [IEA], 2015), primary teachers in Norway may possess one of two types of qualifications: those qualified to teach years 1-7 (exclusively primary school teachers) and those qualified to teach years 5-10 (upper primary and lower secondary teachers). In our study, we did not differentiate between these two qualification types. All participants were selected through purposive sampling. The rationale behind this selection process was to ensure that participants had direct experience in integrating digital tools into their mathematics teaching. By choosing purposive sampling, the study targeted individuals who could provide valuable insights into both the benefits and challenges of using technology in the classroom (Brinkmann & Kvale, 2015). The participants varied in terms of gender and teaching experience, ranging from early-career teachers to those with over two decades in the profession. Additionally, all participants were employed in a school that provided digital resources to students, such as iPads, in line with current practices in Norwegian schools, where digital competence is a growing priority. To maintain the anonymity of participants, the following pseudonyms are offered: Kari, Sofie, Lars, Anne, Ole, Nils, Astrid, Kåre, Sigurd, Solveig, and Ingrid. No further demographic information is provided (e.g., age, years of experience) for two reasons. First, these factors are not relevant to our work here. Secondly, since the participants work at the same school in a small town in Norway, such information may compromise their anonymity.

Data Collection

Data collection, conducted by the first author over a period of two months, was carried out through individual semi-structured interviews. This method was chosen for its flexibility, allowing participants to share their experiences in depth while providing a consistent framework for comparison across interviews (Xenofontos, 2018). Each audio-recorded interview lasted between 45 and 60 minutes, during which participants were asked about their use of digital tools, the perceived impact on student engagement, and any challenges they faced in balancing technology with traditional teaching methods. The interview guide was structured around key topics corresponding to three vertices of the didactical tetrahedron (Ruthven, 2012: the student, the teacher, and mathematics. Table 1 presents sample questions from the interview guide. Since the interviews were semi-structured, not all participants were asked the same questions, as some topics naturally emerged during the conversation. The flexible format of the semi-structured interviews enabled us to cover key topics without adhering to a strict order.

Table 1

The Interview Guide with Sample Questions

Key Topic	Sample Questions
Students' Use of Digital Tools	How often do your students use digital tools in mathematics? Can you provide specific examples? What advantages have you experienced that make digital tools beneficial for students in mathematics? What challenges have you encountered that make digital tools less useful for students in mathematics?

Teachers' Use of Digital Tools in Mathematics	How often do you use digital tools in planning and conducting lessons? Can you provide specific examples? What advantages have you experienced that make digital tools beneficial for teachers in mathematics? Do you feel you have sufficient knowledge to guide students in a digital mathematics class? Why or why not?
Digital Tools and the Subject of Mathematics Itself	From your experience, which mathematical topics benefit from the use of digital tools? Can you give specific examples? Which mathematical topics can be influenced negatively? Can you give specific examples? In what ways has technology changed mathematics as a school subject? In what ways has it not?

Data Analysis

As noted earlier, this study is based on the master's project of the first author, under the supervision of the second. Consequently, the primary data analysis was carried out by the former, with substantial input from the latter. As the master's thesis supervisor, the second author acted as a 'critical friend' (Richards & Shiver, 2020), performing member checks on the transcripts. The interview transcripts were subjected to a thematic analysis, following Braun and Clarke's (2006) six-step framework: familiarising with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and finally, producing a comprehensive report. This approach was selected for its robustness in identifying, analysing, and interpreting patterns within qualitative data, while also maintaining trustworthiness in qualitative research through systematic coding (Killi & Xenofontos, 2024; Nowell et al., 2017). The analysis began with a detailed reading of the transcripts to gain an overall understanding of the data. Initial codes were generated, focusing on themes such as the perceived benefits of digital tools in fostering student motivation and the challenges posed by digital distractions. Both inductive and deductive approaches were applied during the coding process. Pre-existing theories about technology in education informed some of the initial codes, while others emerged directly from the data, reflecting the participants' unique experiences. The codes were then grouped into broader categories, falling under the three vertices of the didactical tetrahedron, which served as our broader themes.

Ethical Considerations

Ethical approval for the study was obtained from the Norwegian Agency for Shared Services in Education and Research (Sikt), ensuring that the research adhered to national guidelines on the ethical treatment of human subjects. Informed consent was obtained from all participants prior to the interviews. Participants were fully briefed on the purpose of the study, their rights as participants, and the voluntary nature of their involvement. They were also informed that they could withdraw from the study at any point without any repercussions. To maintain confidentiality, and privacy in qualitative research, as Brinkmann and Kvale (2015) emphasise, participants were assigned pseudonyms, while any identifying information was removed from the transcripts and final report. The recordings and transcripts were stored securely, and only researchers could access the raw data.

Findings

This section is organised using three vertices from the didactical tetrahedron (i.e., the student, the teacher, and the subject of mathematics) and how these relate to the fourth vertex,

technology, and, more specifically the use of digital tools. In doing so, we deliberately avoid quantifying how many teachers addressed an issue, as our purpose is to map, and not quantify their experiences. Readers should keep in mind that we present these findings without discussing or attempting to interpret them, as we wish to provide a more truthful depiction of teachers' own experiences. Discussion of the findings and connections to the academic literature takes place in a subsequent section.

The Student

Personalisation and Adapted Learning

Several teachers highlighted the benefits of using digital tools in mathematics to tailor instruction based on students' abilities and needs. For instance, Anne appreciates how these tools automatically adjust levels of difficulty for children. In her own words, "[m]any of these maths platforms increase in difficulty when a student is doing well. It's much easier to tailor tasks digitally instead of manually searching for appropriate exercises". Kåre agrees, pointing out that digital tools offer equal opportunities for students regardless of their background. He also emphasises their value for students with reading or writing difficulties, arguing that "[i]t's been particularly useful for children with dyslexia or dyscalculia, who can use headphones to have tasks read aloud. This makes it easier for them to understand and complete the work correctly". For Sofie (quote below), digital tools are invaluable in promoting independent learning. Instead of forcing students to complete tasks within a set time, they can work at their own pace with a variety of personalised tasks. Many platforms also provide instructional videos for additional support:

> The advantage is probably that it offers many differentiation options. You can choose which level to work at, so some students can push themselves further. [...] It's very self-instructive. And especially if they make too many mistakes in a task, a video will appear to repeat the explanation, and so on. It offers different approaches and types of tasks than the book allows. [...] Kikora[2] is really good because you can choose – I can decide what they should work on, and they can also choose themselves, to some extent. And it adjusts according to their skills. You can take a longer time or less time. It's great, especially for weaker students, as they can work at their own pace without having to rush and miss the last pages of the book.

Overall, teachers agree that the use of digital tools in mathematics education offers significant advantages by providing tailored, self-paced learning experiences for students of varying abilities. From enhancing individualised instruction to supporting students with learning challenges, these tools help foster independence and ensure that all students can engage with the material at their own level and pace.

Increased Motivation

The 11 participants shared remarkably similar views on how the use of digital tools in the mathematics classroom enhances students' motivation. Ingrid, for example, highlighted how these tools offer gaming experiences that transform students' attitudes towards maths, making it less frustrating and more engaging. As she put it, "[i]t's like those tools are self-motivating, you know. It's timed, and you get a certificate and things like that. At least, I've found that students think it's motivating". Solveig echoed this view, noting how:

> [t]here are so many fun programmes that motivate. [...] It's as if they [students] are in a game, solving mathematical problems. So, it has a lot to do with motivation. [...] I've also seen students who struggle with learning their times tables. If they use a

[2] https://kikora.no/

> multiplication app, their brain somehow filters out everything to do with maths and just allows the gaming experience.

Sofie also emphasised the role of motivation, focusing on how learning from peers sustains engagement. She described how digital tools create different types of participation in the classroom: "If you have an interactive smartboard in the classroom... I used it a lot, particularly with the younger students. You could project the book and other resources, making students more involved. It's motivating because they pay more attention when they know they might be called on. It's fun for them to come to the front, press buttons, and interact. That can be a real motivating factor".

The participants also mentioned that digital tools give students the chance to teach their teacher something new. As Ole explained, "Students are very knowledgeable. They're incredibly skilled. I get a lot of help from them. They teach me a lot, and that gives them a sense of achievement, being able to teach older teachers something new". Nils expanded on this, noting how this creates a sense of accomplishment for students: "They're given the freedom to explore, and some of them might discover something I haven't noticed. It becomes a shared learning experience. We learn together. I can say, 'Wow, look at this! She's found this answer or discovered this method.' Then I'll ask, 'Can you explain how you did that?' That's great".

In conclusion, the interviewees agree that digital tools in maths offer adaptations that provide all students with the same opportunities for success, regardless of ability or need. Many programmes adjust the level of difficulty based on previous answers, promoting independent work. Additionally, several teachers noted that digital learning games ignite interest, making mathematics more motivating for many students.

Negative Effects on Students

While digital tools offer many opportunities, teachers also voiced concerns about the challenges technology presents to students' learning. A common concern is that a wide variety of online tools encourages students to click through tasks without fully engaging, often rushing to complete them by guessing. Ingrid, for example, shared her experience:

> Sometimes they just sit and click through the tasks just to move on. We see this often. If websites and apps allow it, children will progress without thinking or critically assessing their answers. When they get something wrong, some don't even bother to ask—they just keep going. [...] It's hard to stop this behaviour because it becomes automatic, and monitoring 22 students at once to see what each is doing is impossible.

Kåre noted that notifications and lights from students' iPads create a distracting environment and suggested that devices should be set aside for students to concentrate fully on classroom activities. He also stressed how digital tools often cause disruptions, as students' familiarity with and interest in devices frequently pull their attention away from the task at hand:

> There are so many other things you can use an iPad for, and those distractions are always lurking in the background. It's like having your phone on the table—you know a Snap could come in any moment, or that Messenger notification you're waiting for could pop up. It's the same for students with their iPads—there's always something else tempting them. [...] It's a massive distraction.

Similarly, Ole observed how easy internet access can lead to distractions. He believes that digital tools often divert students' focus from important learning:

> I see individual students pushing boundaries, using the iPad or computer for things other than classwork. It's so easy for them to switch between a subject page and another site like Safari or Google without us noticing. They pretend to be working. They quickly switch back when I approach. [...] They take advantage because they know more about it than I ever will.

In summary, while digital tools offer valuable opportunities in mathematics education, teachers express concern over their potential to distract students and encourage superficial engagement. Many students rush through tasks without critical thought, often becoming distracted by the many features of their devices. Teachers also find it difficult to monitor behaviours effectively, as students can easily navigate between educational tasks and other online distractions, undermining their learning experience.

The Teacher

Adapted Teaching

As previously mentioned, digital tools offer opportunities to tailor mathematics to students' abilities and needs, providing better conditions for success within the classroom. The respondents claim that the teachers' task of adapting lessons becomes significantly easier when using digital tools during planning. For example, Ole believes that technology allows for assigning tasks directly to students, rather than spending time photocopying for each individual: "I can assign tasks directly in Skolestudio[3], for instance. It's great for adapting to each student's level and development, so I can tailor tasks according to where they are. If a student is in Year 7 but works at a Year 5 level in maths, I can give appropriate tasks without wasting time at the photocopier".

Ole has noticed this saves a lot of time, a view shared by Kåre, who adds that "as long as there's the internet, there are endless resources available". Lars also takes advantage of digital tools for creating creative lessons, as the internet offers "room to find a bit of inspiration". As he said, "[i]n maths specifically, there are so many apps and websites to find drills. I use maths puzzles as homework for those who want an extra challenge, so it's primarily a tool for me. And there are many good tips out there, so I see it as more of a tool for myself".

According to Sigurd, teachers gain a clearer overview of students' progress when working digitally, which helps them plan tailored lessons. As stated, "[i]t's useful to get an overview of all the students – results, understanding – if the programmes are designed for that. You can check how long they've worked, what they've understood. It gives me an indicator that I can match with my own perception". Ole experienced this when schools in Norway closed due to the Covid pandemic, and many teachers had to shift to digital teaching:

> Not all students can focus on a lesson in class, but digital tools can help by allowing students to receive instructions via Teams. This became very clear during the pandemic when we had to quickly switch to online teaching. Digitalisation really took off, and we had to adapt. It became much easier to give feedback directly in the text, without waiting until Friday to hand back a marked book.

All in all, as teachers argued, digital tools in education offer significant benefits by allowing teachers to tailor lessons to individual students' needs, streamline their workflow, and access a vast array of resources. Teachers find that digital platforms save time and enable them to provide quicker, more personalised feedback, which was especially valuable during the shift to online teaching. By offering better insights into students' progress, these tools support more

[3] https://www.skolestudio.no/

effective and customised teaching, ultimately enhancing the learning experience for all students.

Administrative Work and Planning

Several participants highlight how digital tools have simplified administrative tasks. For Kari, daily life has become much easier since digitalisation, as she can now store everything in one place. With internet access, she can access all documents on her computer, phone, or iPad, no matter where she is. She explains:

> I have a much better overview of what I've covered and what I still need to cover because everything is in one document on my PC. I can also open it on my iPad or phone when I'm elsewhere. It's stored in the cloud, so I can add things wherever I am without needing to carry a book. It's made my daily life much easier.

Anne relates to this and adds that communicating with students outside school hours has also become easier:

> I also distribute the weekly plan on Teams and communicate with the students. They can ask me questions if they're unsure about something. [...] I can also acquire knowledge if there's something I'm unsure about. [...] Yes, I use it a lot. [...] There's no point in coming in on Thursday and saying you didn't understand the homework because you have the opportunity to ask me throughout the week. If they've forgotten the homework at home, they can message me, and I'll send it to them digitally. It gives them fewer excuses for not getting things done, and it significantly lightens the workload. [...] I find it practical for planning – doing things digitally and keeping them digital. Cloud storage allows me to access everything from both my iPad and PC.

Anne sees mostly advantages in using digital tools, particularly for mathematics. For her, it has been a positive contribution to planning. Kåre agrees, adding that digital tools have been helpful for assigning homework. He shares that "[t]he availability of many online resources gives us another option for assigning homework, which can be useful. It provides variety for the students and allows me to follow up in different ways, beyond just collecting and marking or reviewing in class".

Overall, the majority of teachers report that the adaptation to digital tools has made their administrative work, especially in planning for mathematics lessons, significantly easier.

Lack of Digital Competence

The participating teachers' use of digital tools in mathematics seems linked to their age. Anne, a younger teacher, feels confident using digital tools, having grown up with them. She explains, "I have sufficient competence [...] I enjoy it and probably learn most of it on my own. But it's unfortunate that it depends on personal interest." Ingrid shares a similar view, saying, "I remember some [tools] from university, but I've mostly kept up with them on my own. It hasn't been an issue for me, but I imagine older teachers find it harder".

On the other hand, Ole is one of those who rarely use digital tools in mathematics, explaining that "I'm a bit old-fashioned, you know, so I use them very rarely, really". Others of a similar age have stuck with traditional teaching methods, as this is what they feel comfortable with. Sigurd, for example, says that:

> [i]n primary school, too much goes wrong, I think. You try to show something on a screen, and it's not synchronised. There's just so much hassle, and I'm not that good with it. I'm not exactly a tech wizard. For me to use it, it has to work. When things don't work, I struggle a bit. And we have to adjust, and the kids don't have the software, or it doesn't

> come up, they make mistakes, 'what am I doing wrong.' There's just so much of that, it gets a bit … It takes up a lot of time. […] And as I said, I'm not particularly comfortable using it. I can manage, but that's about it. I feel it often takes a lot of time away from actual learning.

For Sigurd, the use of digital tools detracts from time that could otherwise be spent teaching mathematics, a feeling also shared by others. Kari, for example, mentions that many teachers have to adapt because of how fast things have progressed. For her, this takes far too long. She believes this is one reason why some teachers choose not to incorporate digital tools in their mathematics lessons:

> It's partly because progress has sped up a bit. You've been working in one way, and then suddenly you have to completely adapt. […] I think some teachers feel they don't have the time to familiarise themselves with it properly, because their day is already so full. I think some see it as more of a time thief, and sometimes they don't realise its value. If you'd invest the time, it might have made your day easier, but there's just no time or energy to start that process.

In summary, the use of digital tools in mathematics teaching seems to correlate with teachers' age and ease with technology. Younger teachers tend to embrace these tools with confidence, while older teachers often prefer traditional methods, citing difficulties with technology and the additional time required for integration. The rapid pace of technological advancement has left some teachers feeling overwhelmed, viewing the adoption of digital tools as a time-consuming challenge rather than a beneficial resource for their teaching.

The Subject of Mathematics

Effective Support for School Mathematics

The teachers provided examples of why they believe digital tools are effective for school mathematics. For Sofie, they are particularly useful for practising large quantities of tasks: "As I said, when we need to practise more. If I feel the book doesn't have enough exercises, for example, the multiplication table or geometry, I use it for practice". Similarly, Nils admits, "I've found the multiplication table to be really useful. I've used various websites and multiplication songs". Astrid shares an example from her class:

> We use it a lot for number learning. [...] Especially geometry and things like that. For example, when working with volume, you can use Minecraft[4]. It becomes clear when you ask them to build something, pretending one block in Minecraft is a cubic centimetre, and they then build a cubic decimetre. The fact that the cubic decimetre contains so many more blocks than the centimetre is difficult for some students to grasp, but it becomes clear when you're building block by block. [...] It's also a platform the kids are familiar with, and I imagine they remember it better.

Kari has also noticed that digital tools present mathematical ideas in ways a textbook cannot:

> I've looked at something called Brilliant[5], a maths app. [...] It has great visualisations for understanding mathematics, showing how things look in practice. For example, when working with fractions, it provides excellent illustrations. I'm very focused on different models like that. [...] There are also apps for number lines, which you can generate with a few clicks instead of drawing them by hand.

[4] https://www.minecraft.net/en-us
[5] https://brilliant.org/

Overall, teachers' experiences demonstrate that digital tools enhance the subject of mathematics by offering alternative methods and visual aids that engage students in new ways. These tools not only provide more practice opportunities but also allow for clearer demonstrations of complex topics and concepts, like geometry and number learning. By using platforms familiar to students, digital tools help motivate and support students in understanding mathematical ideas, making learning more accessible and effective.

Challenges for School Mathematics

For the teachers in this study, there is no doubt that school mathematics has changed over the years. For example, Sofie claims that "we are now more focused on understanding. […] There's a bit less memorisation and more comprehension". Ole, on the other hand, argues that the fundamental understanding of mathematics is lost if one solely relies on digital tools:

> I think they will miss out on the essential basic skills required. For example, in maths, physically using a protractor. How do you place it on the paper to get the correct angle? If it's only done digitally, they will lose the basic skill of knowing what a protractor is and how to use it in the most elementary way. That will disappear.

Ole believes that physical work with pen and paper is necessary for students to achieve the desired learning outcomes in mathematics. Lars also remarks, "I do think it's unfortunate that so much has become digital, although it certainly offers opportunities. So, I think a good mix is important. Not just one or the other. […] No, it's related to hand-eye coordination. So, I would never fully abandon pen and paper". Kåre, in turn, gives an example of why he believes a combination is crucial:

> I think some students would feel less ownership if everything was done digitally. Research has also shown that holding a pencil triggers different processes in the brain compared to working digitally. So, I think it's very important to do both. Of course, we need to include the digital aspect because we live in a digital world. We can't rely only on pencils and books, but we can't go fully digital either. I think we would lose something very important. […] I believe understanding might be slightly diminished, and students would have fewer tools to work with. They wouldn't be able to just grab a grid book and sketch or make tally marks. They'd feel helpless if they found themselves without a computer one day. It could also affect their confidence and belief in their problem-solving abilities because there are always many ways to solve a problem.

For the participants, the consensus is clear: while digital tools offer significant advantages in mathematics, they cannot entirely replace the value of physical work with pen and paper. They advocate for a balanced approach, combining digital and traditional methods, to ensure that students not only thrive in a digital world but also retain essential problem-solving skills and the confidence that physical tools provide.

Discussion

The integration of digital tools in mathematics education offers both promising opportunities and significant challenges, as reflected in the experiences of the teachers interviewed. A prominent theme that emerged from the study is the potential of digital tools to enhance personalised learning. Several teachers shared examples of how these tools adjust to students' individual needs, allowing for differentiated instruction that is difficult to achieve through traditional methods. For instance, tools like Kikora automatically increase the difficulty of tasks based on student performance, enabling learners to work at their own pace. This aligns with Swensen's (2014) observations on the value of adaptive learning environments, particularly in subjects like mathematics, where student abilities vary widely. By allowing students to engage with material that matches their level of understanding, these tools foster

greater independence and confidence in learners, a conclusion supported by previous research (Viberg et al., 2023).

In addition to fostering personalised learning, digital tools were reported to increase student motivation. Teachers described how the gamified aspects of many educational platforms transform mathematics from a subject, which students often find daunting into a more engaging experience. Several participants noted that students see these activities as less stressful and more like games, increasing the possibility of their active participation in lessons. This reflects the findings of Deater-Deckard et al. (2013) and Fadda et al. (2022), who argue that the interactive nature of digital tools can significantly enhance engagement, particularly when compared to more static, traditional learning methods. However, while motivation is a benefit, it is important to consider whether this heightened engagement consistently translates into deeper mathematical understanding, a question that remains open in the literature.

Despite these advantages, the study also reveals significant concerns about the capacity for distraction when using digital tools. Teachers reported that students often become preoccupied with non-educational apps and websites, and this compromises their ability to focus on mathematical tasks. This issue is particularly acute in classrooms where students have open access to the internet or a wide range of apps, leading them to browse social media or play games during lessons. These findings align with those of Klette et al. (2018), who noted that while digital tools can enhance student engagement, they also introduce new distractions that are difficult for teachers to manage. Such distractions can impede the benefits of personalised learning, as students may fail to fully engage with the material, instead rushing through tasks without fully processing their answers.

Related to the issue of distraction is the challenge of over-reliance on digital tools. Some teachers expressed concern that students, particularly those at the primary level, may become dependent on these tools for solving mathematical problems. As Ole pointed out, the frequent use of digital tools for calculations or visualisations could weaken students' grasp of basic mathematical skills. This is consistent with Swensen's (2014) suggestion that over-reliance on technology can impede the development of core competencies, such as mental arithmetic and manual problem-solving, which are essential for building a strong foundation in mathematics. While digital tools offer powerful ways to explore complex concepts, they must be integrated in ways that complement, rather than replace, traditional methods.

Teacher competence with digital tools also emerged as a critical factor influencing their integration into mathematics education. Several participants, particularly those with more years of teaching experience, indicated a lack of confidence in using technology effectively. Teachers, like Sigurd, explained how they often avoid using digital tools due to technical difficulties and additional time required to integrate them meaningfully into lessons. This challenge reflects broader trends in the literature, where insufficient training and a lack of familiarity with digital platforms are cited as major barriers to the effective use of technology in education (Madsen, 2020). For digital tools to fulfil their potential to enhance mathematics instruction, teachers must receive adequate professional development that addresses both technical skills and pedagogical strategies for integrating technology into their teaching.

Interestingly, the teachers in this study also emphasised the need for a balanced approach between digital and traditional teaching methods. While they acknowledged the value of digital tools for promoting engagement and individualised instruction, many expressed concerns that these tools alone are insufficient to develop a full range of mathematical skills. Ole's reflections on the importance of manual tasks, such as using a protractor or completing problems by hand, underline the need to retain aspects of traditional mathematics education, which promotes foundational skills that technology cannot easily replicate. This perspective

aligns with the findings of Loong and Herbert (2018), who argue that a combination of digital and manual approaches is necessary to ensure that students develop both conceptual understanding and procedural fluency.

In summary, while digital tools offer considerable advantages in mathematics education – particularly in terms of personalisation and engagement – they also introduce challenges that require careful navigation. Teachers must find ways to leverage these tools without allowing them to dominate the learning process, therefore ensuring that students remain focused to develop the necessary skills to succeed in mathematics. The findings of this study suggest that ongoing professional development is key to equipping teachers with the skills and confidence to integrate digital tools effectively. Moreover, a balanced approach that incorporates both digital and traditional methods may offer the best path forward, allowing students to benefit from the innovations of technology while preserving the strengths of manual problem-solving.

Implications

While this study was conducted within the specific context of Norwegian primary schools, some of the findings can be generalised to broader contexts, while others may remain unique to the local Norwegian educational system. Norway's strong emphasis on digitalisation, as seen in government policies advocating for technology integration (Kunnskapsdepartementet, 2023), provides a context where digital tools are more prevalent than in other educational systems. This has led to particular challenges and opportunities related to access, teacher training, and student engagement, which may not be directly applicable in countries with different levels of technological infrastructure or educational priorities.

Regarding the context-specific interest of our findings, the teachers' concerns about distractions from digital tools, such as students being tempted to engage with non-educational content during class, might be particularly heightened in Norway where individual devices are widely available to students (Klette et al., 2018). Additionally, the specific platforms and tools mentioned by the teachers, such as *Kikora* and *Skolestudio*, are tailored to the Norwegian curriculum, making some of the experiences and feedback context-specific. On the other hand, from a more global perspective, the broader pedagogical challenges of integrating digital tools into mathematics instruction (such as balancing traditional methods with digital tools, fostering student motivation through gamification, and concerns over students losing foundational skills due to over-reliance on technology) are themes that resonate with international research (e.g., Loong & Herbert, 2018; McCulloch et al., 2018). These findings suggest that many of the pedagogical strategies and reflections shared by Norwegian teachers could be relevant in other educational contexts where digital tools are being integrated into classrooms.

Our study highlights implications for practice, teacher education, and policy, both within and beyond the Norwegian context. The effective use of digital tools necessitates significant investment in teacher education (Masoumi & Noroozi, 2023). Building teachers' confidence and skills in utilising these tools is essential. Initial teacher education and professional development initiatives should prioritise equipping teachers with digital pedagogical expertise through hands-on learning, encompassing both technical and instructional applications. Digital tools have the potential to enhance engagement and enable personalised learning, but striking a balance between technology and more "conventional" approaches is crucial. Integrating the strengths of digital tools, such as visualisation and adaptive learning, with analogue approaches, including the use of concrete materials and geometric drawings, can promote a deeper understanding of mathematics (Sarama & Clements, 2016). Furthermore, teachers need strategies to manage distractions in technology-enhanced classrooms. Measures such as restricting access to non-educational apps and websites can help maintain focus (Neuwirth, 2022). In addition, equitable access to quality digital tools and

reliable internet infrastructure is vital (Imran, 2023). Funding must address regional disparities and include regular updates to tools, devices, and technical support. Finally, curriculum guidelines should clearly define the role of digital tools in mathematics, ensuring alignment with learning objectives and their integration with traditional methods (Livingstone, 2019).

Reflections on the Use of the Didactical Tetrahedron as a Theoretical Framework

The use of Ruthven's (2012) adaptation of the didactical tetrahedron in this study provided a comprehensive approach to analysing how digital tools shape interactions in the mathematics classroom. Incorporating technology as a fourth component within the traditional teacher-student-content triangle proved particularly useful in understanding the multifaceted impacts of digitalisation. This framework allowed us to recognise not only the potential of digital tools in enhancing instruction but also the complexity of their integration into pedagogical practices. While the application of this framework provided valuable insights within the Norwegian context, it holds broader relevance for global educational settings as well. In any educational environment where digital tools are introduced, the didactical tetrahedron can serve as a robust model for understanding the interplay between teachers, students, content, and technology. By framing technology as an active agent in the learning process, this model encourages educators and policymakers worldwide to consider not just the availability of digital tools, but how they reshape teaching strategies and learning outcomes. This perspective can guide the implementation of technology in classrooms globally, ensuring that it complements rather than disrupts the learning process. Furthermore, the framework's adaptability to various educational settings suggests that its use can transcend local specificities, offering a universal lens through which to examine the integration of digital tools. In contexts where digital tools are being introduced with varying degrees of teacher confidence or student engagement, the didactical tetrahedron helps in identifying and addressing challenges similar to those observed in the Norwegian context, such as teacher preparedness or student distraction. As educational systems around the world continue to embrace digitalisation, the didactical tetrahedron can offer a valuable framework for both researchers and educators to navigate these changes.

Limitations and Suggestions for Future Research

Overall, our findings support several previous studies in this field, contributing to the existing body of knowledge and enhancing the understanding of the topic. This strengthens the confidence in both our findings and the broader literature. However, like many qualitative studies, our research has limitations. One such limitation is that findings from a smaller number of participants may not be easily transferable to all contexts (Brinkmann & Kvale, 2015). While the aim of this study is not to generalise to the wider teacher population of Norway, we acknowledge that a larger number of participants could have provided a more diverse foundation for exploring the possibilities and challenges associated with digital tools.

On the other hand, focusing on one specific school allows us to delve deeply into how teachers there work to ensure good learning outcomes in alignment with societal developments. Although a smaller sample offers less variation, it provides detailed, context-rich insights, which are highly valuable in qualitative research. It is important to recognise that the findings from this particular school may not reflect the experiences of all teachers across Norway. Several factors, such as the municipality's economy, access to digital resources, and individual teachers' experiences with technology, could influence how digital tools are perceived and used in the classroom.

Researchers and practitioners must be mindful of various measures to ensure the quality of the research despite these limitations. Furthermore, the formulation of our research questions acknowledges that the findings will be shaped by subjective experiences, opinions, and

interpretations, which is typical in qualitative studies. That said, these limitations present opportunities for further research. If there is a desire to expand this work, we suggest including a broader sample of teachers from different regions in Norway to compare findings and potentially increase the transferability of the results. Additionally, while this study focuses on teachers' perspectives, future research could explore the views of other key actors, such as students, curriculum designers, teacher educators, and parents, offering a more comprehensive understanding of the use of digital tools in mathematics.

References

Amdam, S. H., Nagel, I., Njå, M. B., & Forsström, S. (2024). Self-control or crime control: Teachers' insights on good practices in 1:1 classrooms and implications for professional development. *Education Sciences, 14*(11), 1267. https://doi.org/10.3390/educsci14111267

Beck, E. E. (2016). *Undring, handlingsrom og teknodemokratiske potensialer: Hva vil vi med IKT?* [Wonder, agency, and technodemocratic potentials: What do we want with ICT?]. In T. Strand, O. A. Kvamme, & T. Kvernbekk (Eds.), *Pedagogiske fenomener: en innføring* [Pedagogical phenomena: An introduction] (pp. 390-404). Cappelen Damm Akademisk.

Bergdahl, N., Nouri, J., Fors, U., & Knutsson, O. (2020). Engagement, disengagement and performance when learning with technologies in upper secondary school. *Computers & Education, 149*, 103783. https://doi.org/10.1016/j.compedu.2019.103783

Brinkmann, S., & Kvale, S. (2015). *InterViews: Learning the craft of qualitative research interviewing.* SAGE Publications.

Deater-Deckard, K., Chang, M., & Evans, M.A. (2013). Engagement states and learning from educational games. *New Directions for Child and Adolescent Development*, *139*, 21-30. https://doi.org/10.1002/cad.20028

Fadda, D., Pellegrini, M., Vivanet, G. & Callegher, C. Z. (2022). Effects of digital games on student motivation in mathematics: A meta-analysis in K-12. *Journal of Computer Assisted Learning*, *38*(1), 304-325. https://doi.org/10.1111/jcal.12618

Folkman, A. K., Josefsson, K. A., & Fjetland, K. J. (2023). Norwegian teachers' experiences with distance teaching and online schooling during the covid-19 pandemic. *Scandinavian Journal of Educational Research, 67*(3), 447-462. https://doi.org/10.1080/00313831.2021.2021445

Goddard, J. T. & Foster, R. (2002). Adapting to diversity: Where cultures collide – Educational issues in Northern Alberta. *Canadian Journal of Education, 27*(1), 1-20. http://journals.sfu.ca/cje/index.php/cje-rce/article/view/2819

Goodchild, S., & Sriraman, B. (2012). Revisiting the didactic triangle: from the particular to the general. *ZDM Mathematics Education*, *44*, 581-585. https://doi.org/10.1007/s11858-012-0449-3

Hennessy, S., Ruthven, K. & Brindley, S. (2007). Teacher perspectives on integrating ICT into subject teaching: commitment, constraints, caution, and change. *Journal of Curriculum Studies, 37*(2), 155-192. https://doi.org/10.1080/0022027032000276961

Imran, A. (2023). Why addressing digital inequality should be a priority. *The Electronic Journal of Information Systems in Developing Countries*, *89*(3), e12255. https://doi.org/10.1002/isd2.12255

International Association for the Evaluation of Educational Achievement (IEA). (2015). Norway: Teachers, teacher education, and professional development. In *TIMSS 2015 encyclopedia: Education policy and curriculum in mathematics and science*. Retrieved December 29, 2024, from https://timssandpirls.bc.edu/timss2015/encyclopedia/countries/norway/teachers-teacher-education-and-professional-development/

Jukić Matić, L., & Glasnović Gracin, D. (2016). The use of the textbook as an artefact in the classroom: A case study in the light of a socio-didactical tetrahedron. Journal für Mathematik-Didaktik, *37*(2), 349-374. https://doi.org/10.1007/s13138-016-0091-7

Killi, E. K., & Xenofontos, C. (2024). Teaching mathematics to children of immigrant backgrounds: Primary teachers' perspectives from Norway. *Journal for Theoretical & Marginal Mathematics Education, 3*(1), 0306. https://doi.org/10.5281/zenodo.13621544

Klette, K., Sahlström, F., Blikstad-Balas, M., Luoto, J., Tanner, M., Tenberg, M., Roe, A. & Slotte, A. (2018). Justice through participation: student engagement in Nordic classrooms. *Education Inquiry, 9*(1), 57.77. https://doi.org/10.1080/20004508.2018.1428036

Krumsvik, R. (2006). The digital challenges of school and teacher education in Norway: Some urgent questions and the search for answers. *Education and Information Technologies, 11*, 239-256. https://doi.org/10.1007/s10639-006-9010-8

Kunnskapsdepartementet (2023). *Strategi for digital kompetanse og infrastruktur i barnehage og skole* [Strategy for digital competence and infrastructure in kindergartens and schools]. https://www.regjeringen.no/no/dokumenter/strategi-for-digital-kompetanse-og-infrastruktur-i-barnehage-og-skole/id2972254/

Kunnskapsdepartementet. (2019). *Læreplan i matematikk (MAT01-05). Fastsatt som forskrift. Læreplanverket for kunnskapsløftet 2020* [Curriculum in mathematics (MAT01-05). Established as a regulation. Curriculum framework for the knowledge promotion reform 2020]. https://www.udir.no/lk20/mat01-05?lang=nob

Kaasila, R. (2007). Using narrative inquiry for investigating the becoming of a mathematics teacher. *ZDM Mathematics Education, 39*(3), 205-213. https://doi.org/10.1007/s11858-007-0023-6

Lindfors, M., Pettersson, F., & Olofsson, A. D. (2021). Conditions for professional digital competence: The teacher educators' view. *Education Inquiry, 12*(4), 390-409.

Litchman. M. (2013). *Qualitative research in education: A user's guide.* SAGE.

Livingstone, K. A. (2019). The place of information and communication technologies in curriculum design and development. *International Journal of Education and Development Using Information and Communication Technology, 15*(4), 180-197.

Loong, E. Y-K. & Herbert, S. (2018). Primary school teachers' use of digital technology in mathematics: the complexities. *Mathematics Education Research Journal, 30*, 475-498. https://doi.org/10.1007/s13394-018-0235-9

Madsen, S. S. (2020). What is the motivation of Norwegian and New Zealand teacher educators for using digital technology when teaching? *Nordic Journal of Comparative and International Education, 4*(2), 42-63. https://doi.org/10.7577/njcie.3826

Marpa, E. P. (2021). Technology in the teaching of mathematics: An analysis of teachers' attitudes during the COVID19 pandemic. *International Journal on Studies in Education, 3*(2), 92-102. https://doi.org/10.46328/ijonse.36

Masoumi, D., & Noroozi, O. (2023). Developing early career teachers' professional digital competence: A systematic literature review. *European Journal of Teacher Education*, 1-23. https://doi.org/10.1080/02619768.2023.2229006

McCulloch, A. W., Hollebrands, K., Lee, H., Harrison, T. & Mutlu, A. (2018). Factors that influence secondary mathematics teachers' integration of technology in mathematics lessons. *Computers & Education, 123*, 26-40. https://doi.org/10.1016/j.compedu.2018.04.008

Meirbekov, A., Maslova, I., & Gallyamova, Z. (2022). Digital education tools for critical thinking development. *Thinking Skills and Creativity, 44*, 101023. https://doi.org/10.1016/j.tsc.2022.101023

Munthe, E., Erstad, O., Njå, M. B., Forsström, S., Gilje, Ø., Amdam, S., Moltudal, S., & Hagen, S. B. (2022). *Digitalisering i grunnopplæring: Kunnskap, trender og framtidig kunnskapsbehov* [Digitalisation in primary education: Knowledge, trends, and future knowledge needs]. Kunnskapssenter for utdanning, Universitetet i Stavanger.

Mølstad, C. E. & Karseth, B. (2016). National curricula in Norway and Finland: The role of learning outcomes. *European Educational Research Journal, 15*(3), 329-344. https://doi.org/10.1177/1474904116639311

Neuwirth, L. S. (2022). Flipd app reduces cellular phone distractions in the traditional college classroom: Implications for enriched discussions and student retention. *Journal of College Student Retention: Research, Theory & Practice, 24*(2), 386-420. https://doi.org/10.1177/1521025120921348

Nowell, L. S., Norris, J. M., White, D. E. & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods, 16*(1), 1-13. https://doi.org/10.1177/1609406917733847

OECD (2023). Learning during—and from—disruption. PISA 2022 Results, Bd. II. Paris: OECD. https://doi.org/10.1787/a97db61c-en

Olofsson, A. D., Lindberg, J. O., Pedersen, A. Y., Arstorp, A.-T., Dalsgaard, C., Einum, E., Caviglia, F., Ilomäki, L., Veermans, M., Häkkinen, P., & Willermark, S. (2021). Digital competence across boundaries—Beyond a common Nordic model of the digitalisation of K-12 schools? *Education Inquiry, 12*(4), 317-328. https://doi.org/10.1080/20004508.2021.1976454

Ottestad, G. (2013). School leadership for ICT and teachers' use of digital tools. *Nordic Journal of Digital Literacy, 8*(1-2), 107-125. https://doi.org/10.18261/ISSN1891-943X-2013-01-02-07

Rezat, S., & Sträßer, R. (2012). From the didactical triangle to the socio-didactical tetrahedron: artifacts as fundamental constituents of the didactical situation. *ZDM Mathematics Education, 44*, 641-651. https://doi.org/10.1007/s11858-012-0448-4

Richards, K. A. R., & Shiver, V. N. (2020). Managing the critical friendship: Using self-study in the doctoral supervision process. *Studying Teacher Education, 16*(2), 240-257. https://doi.org/10.1080/17425964.2020.1763291

Rohatgi, A., Bundsgaard, J., & Hatlevik, O. E. (2021). Digital inclusion in Norwegian and Danish schools - analysing variation in teachers' collaboration, attitudes, ICT use and students' ICT literacy. In T. S. Frønes, A. Pettersen, J. Radišić, & N. Buchholtz (Eds.), *Equity, equality and diversity in the Nordic model of education* (pp. 139-172). Springer. https://doi.org/10.1007/978-3-030-61648-9_6

Ruthven, K. (2012). The didactical tetrahedron as a heuristic for analysing the incorporation of digital technologies into classroom practice in support of investigative approaches

to teaching mathematics. *ZDM Mathematics Education, 44*, 627-640. https://doi.org/10.1007/s11858-011-0376-8

Sarama, J., & Clements, D. H. (2016). Physical and virtual manipulatives: What is "concrete?" In P. S. Moyer-Packenham (Ed.), *International perspectives on teaching and learning mathematics with virtual manipulatives* (pp. 71-93). Springer.

Stake, R.E. (2005). Qualitative case studies. In N. K. Denzin & Y. S. Lincoln (Eds.), The SAGE handbook of qualitative research (3rd ed.) (pp. 433-466). SAGE. https://au.sagepub.com/en-gb/oce/the-sage-handbook-of-qualitative-research/book242504

Swensen, H. (2014). *Omvendt undervisning og tilpasset opplæring* [Flipped classroom and differentiated instruction]. In M. Johannesen & L. Øgrim (Eds.), *Digital praksis i skolen* [Digital practice in schools] (pp. 120-134). Gyldendal Norsk Forlag.

Tveiterås, N. C., & Madsen, S. S. (2022). From tools to complexity? – A systematic literature analysis of digital competence among pre-service teachers in Norway. In Ł. Tomczyk & L. Fedeli (Eds.), *Digital literacy for teachers* (pp. 345-389). Springer Nature. https://doi.org/10.1007/978-981-19-1738-7_18

Viberg, O., Grönlund, Å. & Andersson, A. (2023). Integrating digital technology in mathematics education: a Swedish case study. *Interactive Learning Environments, 31*(1), 232-243. https://doi.org/10.1080/10494820.2020.1770801

Xenofontos, C. (2018). Greek-Cypriot elementary teachers' epistemological beliefs about mathematics. *Teaching and Teacher Education*, 70, 47-57. https://doi.org/10.1016/j.tate.2017.11.007

Pathways to Healing and Thriving: Culturally Responsive Mental Health Programs for Black Youth in Toronto

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Abstract

Black youth face unique challenges stemming from constant exposure to systemic and cultural racism, discrimination, and lack of access to culturally responsive services meeting their needs, which significantly impacts their emotional well-being, career trajectories, and civic engagement. The research project explores the benefits of a culturally responsive program called Catharsis offered by the non-profit organization Generation Chosen, which focuses on supporting Black youth with their mental health, emotional intelligence, and civic engagement. Data was collected between December 2022 and April 2023. Surveys and focus groups were administered to Black youth aged 15 to 20 in Toronto, Canada, who attended programming in the Jane and Finch community known as a racialized under-resourced neighbourhood. Twenty-nine surveys and two focus groups were administered, totalling 55 respondents. Critical Race Theory (CRT) as a theoretical framework was applied to centre the lived experiences of the youth and listen to their concerns and ideas as counter-narratives. Thematic analysis and triangulation of the data indicated that culturally responsive, trauma-informed programming can enhance emotional intelligence and lead to better coping mechanisms to manage stress and cope with systemic barriers. Participants reported improved life skills and mental health by accessing culturally responsive mental health service providers and engaging with staff who had similar lived experiences who modelled vulnerability as a form of strength and maturity. The research contributes to filling in the research gap in the Canadian context around the importance of culturally responsive, trauma-informed programming for Black youth and how it can foster healthy identity development and larger community benefits.

Keywords: trauma-informed, mental health, Black youth, culturally responsive, emotional intelligence

Introduction

In today's multicultural society, Black youth face unique challenges stemming from systemic racism, discrimination, and lack of access to culturally responsive services, which significantly impact their emotional well-being, career trajectories, and civic engagement (Alvarez, 2020; Bailey et al., 2023; Brandford, 2020; Colour of Poverty-Colour of Change, 2019; Eizadirad, 2017; James, 2017; Hanna, 2019; Maynard, 2022; McMurtry & Curling, 2008). Given the profound effects of systemic inequities, this research project explored the benefits of a culturally responsive program offered by a Black-led and Black-serving non-profit organization called *Generation Chosen*, focusing on mental health, emotional intelligence, and civic engagement. Emotional intelligence (EI) as defined by Generation Chosen (2024) examines how individuals function and perform under duress. It refers to "the ability to recognize, understand, and manage one's emotions effectively, as well as empathize with others" (para. 4).

Using Critical Race Theory (CRT) as the theoretical framework (Leonardo, 2013), this study employed surveys and focus groups to engage predominantly Black youth aged 15 to 20 in Toronto, Canada, who participated in programming within the Jane and Finch community. This is a community in Toronto recognized for its racialized and under-resourced characteristics. The data collection process, conducted from December 2022 to April 2023, was designed to intentionally prioritize storytelling, ensuring that participants' lived experiences were expressed authentically and amplified. Twenty-nine surveys and two focus groups were administered, with 55 respondents contributing to the findings. Thematic analysis and triangulation were utilized to ensure a comprehensive understanding of the data. The objective was to gather insights about Generation Chosen's trauma-informed Catharsis program, designed to provide Black youth and young adults with the soft skills necessary to navigate adverse emotional disturbances and interpersonal relationships fraught with psycho-social tensions (Generation Chosen, 2024, para. 1). The research questions guiding this study include: What are the lived experiences, particularly barriers and significant stressors, for Black youth living in an under-resourced community in Toronto? What are the benefits of accessing culturally responsive, trauma-informed programming? How can such programming foster positive self-identity development and community engagement and facilitate healing from trauma?

This study highlights the importance of providing spaces where Black youth can articulate their experiences, predominantly challenges in navigating systemic racism and connecting them with mental health services for healing and thriving. Although many studies have examined trauma-informed practices in educational and alternative community settings (McCallops et al., 2019; Skinner-Osei et al., 2019; Zarifsanaiey et al., 2022), few have focused on racialized trauma within programs offered by non-profit organizations (Bailey et al., 2023; Eizadirad et al., 2024; Williams et al., 2013). This gap is crucial to address, given the increased systemic barriers faced by Black identities in their interactions with institutions and exposure to inequitable policies and practices outside of schools and in the justice system (Government of Canada, 2022). The COVID-19 pandemic intensified these systemic disadvantages, particularly for Black identities from under-resourced communities (Causadias et al., 2022; Eizadirad & Sider, 2020; Eizadirad et al., 2022; Gallagher-Mackay et al., 2021; Toronto Foundation, 2023). As Abdul-Adil and Suárez (2021) point out,

> Youth exposed to community violence usually experience a myriad of adverse consequences with multiple difficulties reported even among those who are "fortunate" to survive violent exposures and incidents. Traumatic stress, one of the most commonly

> reported consequences associated with youth exposed to community violence, is particularly prevalent among urban, low-income ethnic minority youth, many of whom are already suffering from significant socio-economic disparities and poly-victimization vulnerabilities. (p. 334)

In response, there is a pressing need for programming that not only addresses emotional well-being but also acknowledges and incorporates the cultural realities and experiences of Black youth. This research contributes to filling a significant gap in the Canadian context by exploring the role of such programming in fostering positive self-identity development for Black youth.

Author Positionalities

Outlining the positionality of the authors in research exploring trauma in Black youth from a CRT perspective is critical to transparently acknowledge the researcher's own social location, biases, privileges, and influences. The information also provides a contextual understanding of the study's framing for the readers (Hanna, 2019; Lopez, 2003; Matias, 2016). This promotes reflexivity, allowing readers to assess how the authors' perspectives and lived experiences shape the interpretation and analysis of the data.

Marcella Bollers (she/they) prefers to go by the name Nawesa. She is of Afro-Guyanese heritage and was born in downtown Toronto. They lived part of their early childhood in Regent Park, which historically has been another racialized under-resourced community in Toronto and recently undergone gentrification. She later moved to the east end with her family to the Upper Beaches neighbourhood. They graduated from the Factor-Inwentash Faculty of Social Work at the University of Toronto, specializing in Social Justice and Diversity.

Ardavan Eizadirad (he/him) immigrated to Canada in 1998 as an immigrant from Iran and grew up in Toronto, Canada. His grade six teacher, Mr. Eric Tiessen, built a great relationship with him and mentored him to overcome the challenges of being an English as a Second Language learner. Mr. Tiessen encouraged Ardavan to play basketball as a tool to express his anger and frustrations. Ardavan fell in love with the sport, and the life skills and discipline he gained from playing competitive basketball helped him drastically. Through basketball, he was connected with numerous caring adults who supported him in navigating challenges in life on and off the basketball court. After high school, Ardavan attended university, where he met Dwayne and Joseph, the co-founders of Generation Chosen. They all pursued teaching as a career and have kept in touch through various community projects and activism initiatives. Ardavan is now an Assistant Professor in the Faculty of Education at Wilfrid Laurier University. The two co-authors met while Ardavan was teaching a graduate course titled ‘Social Work with Communities and Organizations’ in the Social Work program at the University of Toronto.

History of the Jane and Finch Community: A Case Study of Systemic Oppression and Neglect

The Jane and Finch neighbourhood is a well-known community in northwest Toronto that is not adequately resourced with opportunities and infrastructure compared to predominantly white and higher socioeconomic status neighbourhoods (Ahmadi, 2018; Eizadirad, 2017; Narain, 2012; Richardson, 2008; Williams et al., 2013). Our analysis prioritizes a neighbourhood-level comparison focusing on the Jane and Finch community as a case study. Gorski (2018) outlines various “dimensions of the educational opportunity gap” (p. 103), which are helpful in analyzing disparities in opportunities amongst schools and communities in different neighbourhoods. Some

factors to consider include differences in school funding, availability of resources, student-to-teacher ratios, opportunities for family involvement, and the extent of access to various technologies. By extension, we refer to the term "opportunity gap" (Abudiab et al., 2023), which refers to the intersection of systemic inequities that create barriers for minoritized identities and communities to access opportunities to achieve their full potential. The opportunity gap can be compared in terms of individuals, schools, neighbourhoods, regions, or countries. Whereas the achievement gap (Knoester & Au, 2017) examines outcomes on tests as the barometer for identifying the magnitude of inequities in education, the opportunity gap (Colour of Poverty-Colour of Change, 2019; James, 2017) provides a more holistic community analysis going beyond the individual realm to explore the systemic inequities that serve as barriers impacting student achievement in schools across different social groups (Gallagher-Mackay et al., 2021; Williams et al., 2013; Carter & Welner, 2013).

Historically and up until now, the Jane and Finch community's identity has been characterized by unemployment, single-parent households, and a high percentage of racialized peoples, which makes it a constant target of negative media portrayals and stereotypes (Ahmadi, 2018; Braganza, 2020; Richardson, 2008; Williams et al., 2013). The neighbourhood attracts newcomers and immigrants due to its lower rent and subsidized housing. Residents are predominantly from the Caribbean, Asia, Africa, South America, and India (Richardson, 2008). Initially, the land was taken care of by Indigenous Peoples (Downsview Weston Action Community with assistance from York University's Community Relations Department, as cited in Eizadirad, 2017). In the 1400s, through colonial tactics associated with violence, Indigenous Peoples were displaced by European settlers. Subsequently, the land was claimed by the Government of Canada and appropriated for different uses, including accelerated building of apartments to meet housing demands after World War Two. As Eizadirad (2017) points out, "This linear style of hollow urban planning, without much thought to the internal infrastructure of the neighbourhood, led to the population of Jane and Finch expanding from 1,301 in 1961 to 33,030 in 1971, which included the establishment of 21 high-rise apartment buildings" (p. 29). The neighbourhood continued to experience exponential growth into the 1970s and 1980s without adequate resources and infrastructure, contributing to the rise in unemployment and crime associated with a lack of opportunities for the residents (Ahmadi, 2018; Narain, 2012; Richardson, 2008). Below are various statistics about more recent demographics of the Humber River-Black Creek neighbourhood, which includes the Jane and Finch community:

- 78% are visible minorities compared to 56% city-wide.
- Black (25%), South Asian (14%), and Southeast Asian (10%) are the most predominant visible minorities.
- $37,240 is the average income which is $24,810 less than the Toronto average.
- 31.4% of housing is subsidized housing.
- 64% of the residents are first-generation immigrants, significantly higher than the Toronto-wide average of 53%.
- 28% are refugees, a higher number compared to the Toronto average of 18%.
- 41% of its residents have a post-secondary certificate, diploma, or degree compared to the City-wide average of 62%.
- 58% labour force participation rate compared to 64% City-wide average (City of Toronto, 2021; Statistics Canada, 2016; Statistics Canada, 2021).

The majority of the residents of Jane and Finch continue to be visible minorities and immigrants (Ahmadi, 2018). The neighbourhood continues to be a site of systemic oppression and institutional abandonment when it comes to the opportunity gap. Residents continue to experience systemic racism, state violence, and oppression, which shows up in the forms of inadequate housing, food insecurity, lack of resources, and inequitable social policies (Eizadirad, 2017; Richardson, 2008). The roots of the problems are in the intergenerational impact of colonization intersecting with poverty, racism, racial/ethnic, and gender inequalities (Braganza, 2020; Colour of Poverty-Colour of Change, 2019; Gorski, 2018; Government of Canada, 2022). We specially name and emphasize that the current conditions of the Jane and Finch community are largely influenced and driven by anti-Black racism, white supremacy, deficit thinking, and the devaluation of racialized persons (James, 2017; Maynard, 2022; McMurtry & Curling, 2008).

Theoretical Framework: Critical Race Theory (CRT) and Storytelling

The theoretical framework for this research project combines CRT with storytelling (Garo & Lawson, 2019; Solinger et al., 2008; Zarifsanaiey et al., 2022). CRT is crucial for understanding the multifaceted experiences of Black youth in under-resourced communities (Dixson & Rousseau, 2016; Gajaria et al., 2021; Leonardo, 2013; Lopez, 2003). By examining how societal structures perpetuate disparities in education, access to opportunities, and extent of social mobility (Blackburn, 2019; Carter & Welner, 2013; Gallagher-Mackay et al., 2021; Gorski, 2018; James, 2017), CRT moves beyond individual-level analysis to spotlight the influence of historical inequities and institutional factors contributing to creating magnitudes of disadvantage.

A central tenet of CRT is the privileging of stories and counter-stories, especially those told by people of colour. Lopez (2003) highlights this approach, explaining that CRT scholars recognize two differing accounts of reality: the dominant reality, which appears "ordinary and natural" to most, and a racial reality that has been "filtered out, suppressed, and censored" (p. 84). This research applies CRT to centre the lived experiences and perspectives of Black youth as counter-narratives, captured through surveys and focus groups. These youths' embodied experiences at school and in their communities, along with their emotions, are documented and interpreted as critical data reflecting how they navigate systemic disadvantage and, more importantly, how they cope with such challenges.

The use of personal narratives in this context is not only methodologically significant but also serves a healing purpose by centring the lived experiences of the Black youth as told through their own words. Bowman (2018) argues that storytelling is a fundamental human need, allowing individuals to express their concerns and be heard. In alignment with CRT, our methodology triangulated data collected through surveys, creating opportunities for youth to expand on their stories and lived experiences further through the focus groups. The intersection of storytelling and CRT provided a framework that acknowledges the lived experiences and emotions of Black youth as valuable, insightful data. By centring their expressions of racialized pain and trauma, we present counternarratives to dominant discourses that are often proclaimed as neutral and colour-blind but are, in fact, harmful. These dominant discourses are often saturated with neoliberal and meritocracy ideologies that focus on individualistic factors rather than examining systemic conditions that impact access to opportunities (Hanna, 2019; Matias, 2016; Yancy, 2016). Therefore, centring counter-narratives is significant and vital for disrupting deficit thinking about Black identities and communities and amplifying their concerns in ways that advocate for personal and systemic change. The youth narratives help identify systemic gaps within institutions and how to address them to help Black youth thrive despite being in vulnerable circumstances (Chioneso et

al., 2020). Overall, CRT seeks not just to analyze but to catalyze meaningful societal transformation toward equity and justice, in the process empowering Black voices and fostering critical thinking and activism.

Methodology, Data Collection, and Characteristics of Research Participants

Generation Chosen (https://www.generationchosen.ca/) offers culturally responsive programs and services within the Jane and Finch community. As an organization, they focus on four key pillars which have trauma-informed practices embedded in their philosophical fabric. As Skinner-Osei et al. (2019) remind us,

> Developing a trauma-informed programming involves cultivating an environment that recognizes the impact of traumatic childhood experiences "while striving for a physically and psychologically safe environment for both youth and staff in detention" (Pickens, 2016, p. 226) […] trauma-informed care [TIC] is an evidence-based practice that teaches service providers and their organizations about the triggers and vulnerabilities of trauma survivors and employs effective interventions to treat traumatic responses (2015). TIC "involves understanding, anticipating, and responding to peoples' expectations and needs, and minimizing the chances of re-traumatizing someone who is trying to heal […]" (SAMHSA, 2015). (pp. 10-11)

The four pillars of Generation Chosen are *Mental Health, Emotional Intelligence, Education,* and *Civic Engagement.* Led by Black staff and a team of professionals, Generation Chosen is devoted to enhancing the emotional intelligence of Black youth and young adults from underserved communities. They focus on interrupting the intergenerational cycles of poverty, disenfranchisement, and trauma by facilitating access to mental health providers, educational programs, financial literacy, mentorship, and financial support for post-secondary education and business startups.

The research focused on Generation Chosen's trauma-informed Catharsis Program. The program participants are Black youth who live in the Jane and Finch community. Through weekly evening programming led by Black mentors, the youth are encouraged to share their narratives reflecting their identities and lived experiences. The program is geared towards providing Black youth with the soft skills to navigate adverse emotional disturbances and psycho-social tensions. For those seeking therapeutic support, the program also offers free therapy with a wide range of therapy streams, including art therapy and cognitive behavioural therapy.

The research project was funded by the Social Sciences and Humanities Research Council (SSHRC) and approved by a university research ethics board. At the project's outset, we established a collaborative process with the leadership team at Generation Chosen. We held monthly meetings with co-founders Joseph and Dwayne to co-construct survey questions and finalize the timelines for administering the surveys and the focus groups. This collaborative approach ensured that the questions were culturally relevant to the Black youth participating in the study.

The Catharsis program was offered in cycles from September 2022 to April 2023. Data was gathered in December 2022 and April 2023, coinciding with the conclusion of each cohort's 4-month participation in the program. Surveys were administered anonymously to twenty-nine youth participants through Qualtrics, a secure data collection platform with servers located in Canada. The sample size of twenty-nine surveys was selected based on the availability of

participants in the program's cohort. While not large, it provides rich, in-depth qualitative insights (Creswell & Clark, 2017). The focus on a smaller group allowed for more detailed and individualized narratives. The survey took approximately twenty minutes to complete and included a combination of open-ended and Likert scale questions. It was designed to capture identity-based demographic information as well as participants' experiences in the Catharsis program. To enrich our understanding and ensure the validity of the data, we triangulated the survey results with insights from two focus groups. The first focus group was conducted in December 2022 with 10 participants and the second in April 2023 with 16 participants. Both focus groups were held in person at Emery Collegiate, a high school where the program is offered on weekday evenings. Each focus group lasted 60 minutes and was facilitated by the co-authors. In total, we gathered data from twenty-nine survey respondents and twenty six focus group participants, with some overlap in participation. Among the 55 respondents, 15 identified as female and 40 as male. The average age of participants was 17 years old, with the majority coming from African Caribbean backgrounds, including Black, Somali, and Asian (South Asian and Filipino) communities. As a gesture of appreciation for their time and contributions, each research participant received a $25 gift card.

Data Analysis: Emerging Themes from Surveys and Focus Groups

Data from surveys and focus groups were systematically examined by the authors using CRT as a guiding paradigm, alongside thematic analysis as a methodology (Clarke & Braun, 2017; Denzin & Lincoln, 2000; Plano Clark & Creswell, 2015). The authors read through the focus group transcripts and survey responses and compared notes to identify and code recurring keywords (Miles et al., 2014). These codes were not only grounded in the participants' lived experiences but also aligned with key trends in the literature review. For example, recurring keywords like ‘trauma,’ ‘stress,’ and ‘supports’ were coded from participant narratives, and related codes were grouped to form overarching themes such as ‘culturally responsive programming’ and ‘supportive staff’s influence’. Through this process, the narratives of Black youth, particularly their descriptions of what effective programming looks like and how it aids their healing from trauma, were instrumental in shaping the study's thematic framework. This coding process facilitated the emergence of prominent themes, including the significance of culturally responsive programming in boosting confidence and engagement, the role of relatable staff in creating safer spaces, and the impact of accessing experiential learning opportunities to strengthen cultural community connections. These themes were then used to structure the findings, with examples from the participants' responses illustrating how the themes manifested in their experiences. Through this thematic analysis, the research team was able to draw meaningful connections between the participants' experiences and broader social and educational challenges faced by Black youth.

Theme #1: Increased Confidence and Engagement Through Access to Culturally Responsive Programming and Access to Black Mental Health Practitioners

Survey and focus group responses from Generation Chosen participants reveal the significant impact that culturally responsive programming has on their confidence and engagement. For example, one participant shared how learning about “the economy of society and the difference between rich and wealthy people” empowered them. They explained that this lesson, which focused on the topic of “generational wealth,” helped them understand systemic wealth disparities in relation to their own lived experiences, particularly how historical and structural factors in Jane and Finch have limited their access to economic opportunities. This understanding made them feel more prepared to make informed financial decisions and advocate for economic justice within their

community. The participant specifically remarked, “It made me realize how the rich get richer historically and how we can also make smart choices for our community.” This sentiment demonstrates how programming that integrates discussions of systemic inequities within culturally relevant contexts helps participants see themselves as agents of change, capable of addressing issues that directly affect them and their communities.

Another participant highlighted the value of learning about “Black mental health and emotional intelligence,” a topic rarely covered in traditional education but highly pertinent to their personal and community challenges. They underscored the importance of such programming in providing culturally specific knowledge which addressed the stressors faced by Black youth, including discrimination, racial profiling, and cultural disconnection. These challenges, often compounded by underrepresentation and exclusion in school curricula for Black youth, have significant emotional and psychological effects contributing to increased stress, anxiety, and depression (Gajaria et al., 2021; Gallagher-Mackay et al., 2021; Maynard, 2002).

Beyond creating spaces to talk about relevant topics with program participants, Generation Chosen connects participants with Black mental health practitioners, ensuring accessibility through no-cost services. Culturally responsive programming helped reduce stress in program participants by creating a space where Black youth can see themselves and their cultural realities reflected in the content, fostering positive identity development and facilitating healing from traumas (Azzopardi & McNeill, 2016; Braganza, 2020; Imad, 2020; McCallops et al., 2019). This type of programming is not just about imparting knowledge. It is about meeting the specific needs of Black youth in a way that acknowledges their lived experiences and neighbourhood realities. One participant expressed that through Catharsis, they “learned to love themself,” illustrating how programming that centres on Black identities can foster personal growth and self-acceptance. Another participant described the program as “A safe space where you can be vulnerable. They do not judge you, and you can talk about issues that impact you.”

Culturally responsive programming is intentionally designed to address systemic barriers that impact Black youth while also providing access to opportunities that might otherwise be unavailable or unaffordable, such as learning about financial literacy education, explanations of debt and credit scores, experiencing outdoor excursions like camping, and support for entrepreneurial initiatives. These culturally nuanced activities offered by Generation Chosen to participants promoted a sense of belonging and cultural identity, contributing to improved emotional well-being. Additionally, incorporating culturally specific mental health practices such as meditation and traditional healing methods (e.g., djembe drumming, dance, healing circles, and storytelling) further enhanced emotional regulation and stress management among the Black youth. Many participants remarked that Generation Chosen “teaches life skills,” “talks to you on your level,” “provides the resources we need,” and “models the application of emotional intelligence in real-world scenarios.” These strategies, combined with culturally responsive practices, were significant in improving the mental health and confidence of program participants. As one participant noted, "We are given space to be ourselves, and this makes it feel more like a community.”

Theme #2: Relatable Staff Creating Brave and Safer Spaces by Modeling Vulnerability and How to Manage Stressors

Survey and focus group responses emphasized the pivotal role that relatable staff played in creating brave and safer spaces for participants. Staff members were repeatedly mentioned as being influential by modeling vulnerability and providing guidance on managing stressors and talking about issues that impact participants in their neighbourhood. One participant noted, "The staff are great. They always listen to us and treat us like equals. I trust them with my problems because they've gone through similar things in the community." This quote underscores how staff shared their own experiences with adversity, making them more relatable to the youth. By discussing their personal struggles with racism, economic hardship, or mental health, staff not only build trust but also showed youth how to manage similar stressors in their own lives and provide them with the hope that they can overcome challenges. For example, youth in the focus group and surveys expressed how they know "lots of people who went to jail or have gotten shot," experiences that staff could relate to and help them navigate. This modelling of vulnerability allowed participants to feel safer discussing personal challenges, knowing that the staff can empathize and offer practical support based on lived experiences and, as an extension, connect them with mental health practitioners of the same race.

Participants emphasized how transparency and relatability modelled by program staff fostered an environment where they felt understood and supported. For example, one participant remarked, "The staff talk to us, not at us, and that makes all the difference." This reflects the effort of staff to engage youth in respectful, two-way conversations, further reinforcing a sense of empowerment among the participants. Additionally, the focus on shared cultural backgrounds and race between staff and youth helps solidify these connections. As one participant expressed, "The staff know what it's like growing up in a place like this. They don't judge. They get it." Relatable staff who share similar cultural and community backgrounds created an atmosphere where participants felt safer expressing their emotions and being vulnerable to discuss life struggles or past traumas. This connection is not just about understanding but also about modelling emotional intelligence in real-time. Staff often shared stories about how they have handled stress, trauma, or failure, and this openness served as a real-life demonstration of coping strategies (Anucha et al., 2017; Bailey et al., 2023; Blackburn, 2019; Day et al., 2016). For instance, one participant highlighted that a staff member shared how they navigated feelings of anger and frustration growing up in the neighbourhood and losing a friend to gun violence, which helped the participant open up and share and, by extension, learn to manage their own emotions more effectively.

Through Catharsis, youth are encouraged to reflect on their emotions and learn how to manage external pressures such as peer pressure, love, and body image. These topics are central to the weekly programming, where consistency and staff modeling of vulnerability provide participants with tools for emotional awareness and coping. One participant shared, "At first, I didn't want to talk about my feelings, but seeing how open the staff are made me feel comfortable. Now, I'm better at expressing myself." This newfound willingness to engage in more forthright communication reflects how the program creates an environment of trust, enabling participants to confront their challenges in a supportive and affirming space. CRT supports this focus on fostering trust and emotional safety by centering the lived experiences of marginalized youth and validating the importance of culturally relevant and affirming spaces in overcoming systemic barriers (Lopez, 2003; Matias, 2016).

Generation Chosen also ensures that youth have access to social workers and therapists, recognizing that mental health support must be both culturally relevant and accessible. For many participants, discussing personal topics related to violence, trauma, and systemic inequities can be emotionally taxing and triggering. The inclusion of culturally aligned social workers and therapists addresses this need, creating avenues for deeper healing and growth. Social workers, while distinct from the everyday staff, are integral to the program's holistic approach. As one participant described, with the guidance of a social worker, they "learned how to talk about feelings within a year and articulate feelings without feeling anxiety." This demonstrates the critical role of professional mental health support in equipping youth with emotional regulation skills and coping mechanisms.

The program's relationship-building efforts, such as shared meals and discussions, further foster a sense of community. These culturally relevant practices align with CRT's emphasis on creating counter spaces that resist deficit thinking and center collective well-being (Eizadirad et al., 2022). For instance, one participant noted, "I've seen so many people in my community end up in jail or worse, but the staff here get it. They've been through it and help us see other ways out." This reflects how staff leverage their lived experiences to provide practical guidance, helping youth navigate not only emotional well-being but also broader life decisions. Another participant remarked, "Before, I used to overreact, and now I'm more calm," underscoring the direct influence of staff guidance on participants' emotional growth. These moments of connection and growth demonstrate how culturally relevant relationship-building promotes emotional resilience and self-regulation among youth.

Participants frequently highlighted the importance of having Black mentors and leaders within the program. These mentors, through their shared cultural and lived experiences, create a safer and trusting environment where youth feel understood and valued. As one participant shared, "I don't feel safe going to my parents or even discussing certain issues with my friends, but I can talk to staff in the program." This sentiment illustrates the critical role of relatable staff in providing youth with a secure space to explore sensitive issues that they may not feel comfortable addressing elsewhere. Additionally, participants reported significant benefits from working with Black social workers, including learning to articulate their feelings and addressing personal issues with greater clarity and confidence. By recognizing the effects of trauma associated with feelings of isolation or depression and equipping participants with tools to process and heal from it, Generation Chosen exemplifies CRT's principle of centering the voices and needs of marginalized communities to disrupt systemic inequities. This program validates participants' cultural identities and lived experiences, helping them build positive self-concepts and stronger connections to their community. In doing so, it fosters a sense of belonging, enabling youth to navigate systemic barriers and envision possibilities for their future (Alvarez, 2020; Anucha et al., 2017; Barnes, 2019; Gajaria et al., 2021; Jones & Boufard, 2012).

Theme #3: Strengthening Cultural and Community Connections by Creating Access to Opportunities Beyond the Neighbourhood

Responses from participants emphasized the importance of strengthening cultural and community connections and accessing opportunities beyond their immediate neighbourhood as essential to their personal growth and identity development (Chioneso et al., 2020; Ticar & Edwards, 2022; Zarifsanaiey et al., 2022). One participant reflected on the value of these opportunities stating, "It allows us to meet a lot of new people that come with connections and gives us the opportunity to experience real-life scenarios and future opportunities." This insight underscores how experiential

learning activities offered by the program, such as meeting Black mentors, community leaders, and professionals, created pathways for personal and professional development. These activities exposed participants to diverse perspectives and helped them expand their understanding of social and professional networks beyond the confines of their community.

CRT provides a lens to understand the transformative impact of these experiences by emphasizing the need for counter spaces where marginalized individuals can challenge systemic barriers and connect with culturally affirming role models. These counter spaces are vital for fostering cultural pride and empowerment among Black youth, as demonstrated through activities like overnight camps. While one participant described the camp as "super memorable," the significance extended far beyond creating lasting memories. Participants shared how the camps fostered teamwork, facilitated meaningful personal reflection, and cultivated cultural pride. For instance, one participant elaborated, "At camp, we had deep conversations about our cultural backgrounds and how we can support each other as a community. It made me feel connected to my roots in a way that school never does." This example illustrates how the camp served as a counter space where Black youth could engage in meaningful cultural discussions within a supportive environment, deepening their understanding of their heritage while developing interpersonal and leadership skills to better their communities. Furthermore, the camps included guided activities that emphasized cultural traditions, such as storytelling and community-building exercises, which many participants identified as pivotal in strengthening their cultural identity. As one participant noted, "It made me realize the importance of knowing where I come from and using that to motivate myself." These sentiments illustrate how these experiences helped participants reconnect with their heritage and develop a renewed sense of cultural pride and belonging. Through this lens, CRT highlights the critical role of culturally responsive programming in providing opportunities for Black youth to engage with their identities and resist systemic erasure in traditional educational spaces.

The value of these experiences involving taking youth outside of their community lies in providing them with enriching opportunities that are culturally relevant and identity-affirming. Programs like Catharsis offer avenues to explore identity, culture, and personal growth through a variety of activities such as sports, entrepreneurship, and financial literacy workshops. One participant shared that "learning about financial literacy and how to manage money was empowering because we don't get taught that in school. It made me feel like I could really plan for my future." This comment underscores how these programs provide practical skills that are directly relevant to the participants' lives and the challenges they face in their neighbourhood, helping them feel better equipped to navigate personal and community challenges. The transformative impact of the program was evident in how it fostered essential life skills. For example, sports activities were highlighted as important for developing communication skills and accountability. One participant explained, "Engaging in sports taught me how to communicate better with my peers and take responsibility for my actions. That's something I now apply outside of the program, whether at school or home." This quote reinforced the idea that these activities are not only recreational but also formative, in the process teaching critical social skills that youth apply in various aspects of their lives. Additionally, the program's focus on scholarships and entrepreneurial opportunities was empowering for participants. As one participant explained, "The business plan competition helped me develop an idea, pitch it, and think about how to turn it into a real business. Winning the competition showed me that I could really succeed in something I'm passionate about."

Culturally responsive programming empowers youth by giving them the tools and opportunities to pursue their ambitions, whether through post-secondary education or entrepreneurial ventures. The Catharsis program emphasized how students can experience multiple pathways to success and that the process is not always linear. The importance of these experiences goes beyond the individual; they contribute to strengthening cultural connections within the community. Through culturally relevant activities, youth were encouraged to explore their identities, fostering a sense of pride and belonging that supports their overall well-being. For instance, in one weekly activity, participants wrote letters to their future selves and read them a year later, which one participant described as "a powerful way to reflect on how far we've come." This activity helped youth reconnect with their personal and cultural identities, reinforcing the value of self-reflection and cultural pride as part of their growth journey.

Overall, the opportunities provided by Generation Chosen to program participants allowed the youth to celebrate their heritage, fostering a sense of pride and belonging that directly influenced their ability to succeed in a variety of contexts. The transformative experiences provided through culturally responsive programming serve as bridges connecting youth to broader networks, resources, and opportunities. Access to leadership training, financial literacy education, and outdoor camps empowered youth to transcend the limitations imposed by living in low-income and under-resourced communities. These experiences are not just educational but also deeply tied to the participants' cultural identity. By offering culturally relevant experiences, Black youth were able to strengthen their cultural connections and recognize their cultural capital, while simultaneously building life skills necessary for their personal and professional development.

Recommendations and Next Steps

The themes discussed converge through the idea that culturally responsive, trauma-informed programming is a catalyst for holistic growth. Catharsis programming empowers youth by providing them with a strong cultural foundation through culturally responsive curriculum content, staff modeling vulnerability and resilience, access to Black mental health practitioners free of cost, and offering transformative experiential opportunities that extend beyond the neighbourhood where the program participants live. These interconnected elements create a comprehensive support system for Black youth that fosters emotional well-being, cultural pride, and the skills needed to navigate and overcome systemic barriers. The recommendations from the youth, shared via surveys and focus groups, are grounded in these interconnected themes. They call for a more comprehensive, empathetic, and long-term community-oriented approach that addresses the systemic barriers and inequities impacting their community. Below are their recommendations:

1) *Strengthen Cultural Identity through Relevant Curriculum Content*: Implement programs that celebrate and affirm Black cultural identities, providing a foundation for youth to develop a strong sense of pride in their heritage. The youth emphasized how this was lacking as part of their schooling experiences.
2) *Invest in Creating Brave and Safer Spaces:* Ensure that staff are relatable and culturally responsive, both in schools and in after-school and evening programs, modelling vulnerability and resilience to create environments where Black youth feel brave and safer to express themselves, their identities, and the challenges they are experiencing.
3) *Provide Access to Diverse Opportunities:* Provide transformative experiences and experiential opportunities that extend beyond the neighbourhood such as field trips, camps, leadership capacity-building, and financial literacy training which are crucial for personal

and professional development. Costs should be subsidized so the opportunities remain accessible, particularly for youth from single-parent households and lower socio-economic status backgrounds.

4) *Long-Term and Sustainable Government Support and Investment:* Greater government and institutional support are required to fund and sustain culturally responsive initiatives and programs, ensuring they are accessible to all youth, especially those from underserved communities.

These recommendations offered by the Black youth attending Generation Chosen's Catharsis program highlight the need for a holistic approach that integrates cultural identity, emotional support, and access to opportunities, all of which are crucial for empowering Black youth to thrive in the face of systemic challenges. It was clear that the recommendations aimed to break the cycle of blame and deficit thinking projected onto the community and instead championed solutions that aligned with the lived experiences and needs of the youth themselves.

The findings from this study have significant implications for the field of education and schooling, particularly in the context of in-service and pre-service teacher training. The participants' recommendations underscore the need for a more culturally responsive curriculum that goes beyond superficial acknowledgments of Black history. This suggests a broader imperative for educators to integrate diverse cultural narratives and lived experiences into their teaching practices, ensuring that all students see themselves reflected in the curriculum. For in-service and pre-service teachers, this means engaging in ongoing professional development focused on cultural competency, anti-racist pedagogy, restorative practices, and trauma-informed and healing approaches. Such training could help educators and other practitioners more effectively understand the unique challenges faced by Black youth and communities and equip them with the tools to create more inclusive and supportive learning environments.

From the researchers' perspectives, the study highlights the importance of not only addressing the content in the curriculum, but also rethinking the delivery and structure of educational programs pedagogically to accommodate the diverse needs of students and their families, especially those in vulnerable circumstances (e.g., parents who are incarcerated or those who are constantly exposed to gun violence in their neighbourhood). This includes race and gendered dynamics that may influence participation, as well as the time constraints and family responsibilities that can limit access to educational opportunities. The insights gained from this research suggest that schools and education programs could benefit from offering more flexible and accessible programming, such as evening or weekend classes, childcare services, and transportation assistance, to remove barriers to participation for residents in marginalized communities.

While the findings of this study are specific to a particular low-income community in Toronto, the implications go beyond this context. The challenges and needs identified by the Black youth, such as the importance of culturally responsive education, the need for systemic support to address poverty and violence, and the benefits of experiential learning opportunities, are relevant to other regions and organizations offering youth programming. These findings could inform the design and implementation of similar programs in different contexts, encouraging synergetic partnerships where educators and program developers (e.g., schools and non-profits working together) prioritize cultural relevance, accessibility, and community engagement.

Conclusion and Further Areas for Exploration

Many Black youth continue to face systemic challenges stemming from intergenerational trauma, discrimination, and systemic racism, which profoundly impact their mental health and identity development. This study contributes to CRT in a Canadian context by illustrating how culturally responsive programming can serve as a counter space that centers the voices and lived experiences of Black youth, enabling them to navigate these challenges with greater agency and empowerment. CRT's focus on counter-storytelling and its critique of systemic inequities provides a valuable lens for understanding the transformative role of initiatives like Generation Chosen's Catharsis program. By integrating culturally meaningful healing practices such as storytelling, art therapy, and community engagement, the program facilitates emotional healing and promotes positive self-identity development and community engagement (Sangalang et al., 2020). Additionally, such initiatives foster leadership skills, critical thinking, and social skills, empowering youth to be advocates and activists in mitigating systemic issues in their communities.

The findings extend CRT by showing how culturally responsive programming empowers Black youth to disrupt deficit narratives and affirm their cultural identities. The program's focus on building emotional intelligence, fostering leadership skills, and enhancing critical thinking exemplifies CRT's emphasis on creating opportunities for marginalized communities to resist systemic oppression and advocate for systemic change. Participants' experiences demonstrated how these spaces foster resilience and agency, equipping them to challenge inequities in their communities and beyond. This study aligns with and builds on existing CRT research emphasizing the centrality and impact of race in shaping lived experiences and accessing opportunities, by providing concrete examples of how race-conscious, trauma-informed programming can disrupt cycles of systemic marginalization and intergenerational trauma.

While the Catharsis program demonstrated significant positive impacts, several challenges and limitations must be addressed to ensure broader and more equitable participation. Notably, gender disparities in participation suggest a need to reassess program structure and outreach efforts to engage more young women effectively. Additionally, barriers such as time constraints, transportation challenges, and safety concerns related to neighbourhood politics and polarization highlight the importance of flexible programming and targeted support services. These challenges underscore the need for future iterations of culturally responsive programs to be more adaptable to the complex realities of participants' lives.

Future studies should consider more extensive approaches to address multifaceted challenges faced by Black youth. These studies should aim for larger sample sizes and longitudinal research to track student progress and wellbeing over extended periods, enabling a more comprehensive understanding of their experiences. It is also critical to explore school-community partnerships and synergies that better support Black youth and their families. Additionally, a comparative lens should be applied by conducting studies across various neighbourhoods to identify region-specific dynamics to more intentionally identify disparities in accessing opportunities (e.g., amongst race, socio-economic status, gender, etc.).

Looking ahead, it is crucial to continue developing and advocating for the implementation of more culturally responsive, trauma-informed programming to empower Black youth and promote their emotional well-being, especially within the context of low-income communities similar to the Jane and Finch community. Culturally responsive programming that promotes emotional intelligence, affirms Back youth identities and their culture, and facilitates healing is an

integral approach to empowering these young individuals and meeting their needs, personally and as a community. As a collective, these considerations are vital not only at the local level but also on a national and international scale to develop holistic strategies, programs, and partnerships that authentically support the emotional well-being of Black youth to create, cultivate, and maintain the conditions for them to thrive and achieve to their full potential.

References

Abdul-Adil, J., & Suárez, L. M. (2021). The urban youth trauma center: A trauma-informed continuum for addressing community violence among youth. *Community Mental Health Journal, 58*, 334-342. https://doi.org/10.1007/s10597-021-00827-4

Abudiab, S., Eizadirad, A., & Baartman, B. (2023). Team of caring educators delivering a specialized math curriculum for racialized youth during COVID-19. *Excellence in Education Journal, 12*(1), 123-147.

Ahmadi, D. (2018). Diversity and social cohesion: The case of Jane-Finch, a highly diverse lower-income Toronto neighbourhood. *Urban Research & Practice, 11*(2), 139-158. https://doi.org/10.1080/17535069.2017.1312509

Alvarez, A. (2020). Seeing race in the research on youth trauma and education: A critical review. *Review of Educational Research, 90*(5), 583-626. https://doi.org/10.3102/0034654320938131

Anucha, U., Srikanthan, S., Siad-Togane, R. & Galabuzi, G. E. (2017). *Doing right together for Black youth: What we learned from the community engagement sessions for the Ontario Black youth action plan*. Youth Research and Evaluation eXchange (YouthREX). https://youthrex.com/wp-content/uploads/2018/07/YouthREX-Report-Doing-Right-Together-for-Black-Youth.pdf

Azzopardi, C., & McNeill, T. (2016). From cultural competence to cultural consciousness: Transitioning to a critical approach to working across differences in social work. *Journal of Ethnic & Cultural Diversity in Social Work, 25*(4), 282-299. https://doi.org/10.1080/15313204.2016.1206494

Bailey, A., Bailey, R., Newman, G., Barrett, A., Nguyen, M., & Lindsay, J. (2023). Deconstructing the trauma-altered identity of Black men. *Journal of Child & Adolescent Trauma, 17*, 999-1012. https://doi.org/10.1007/s40653-023-00526-0

Barnes, T. N. (2019). Changing the landscape of social emotional learning in urban schools: What are we currently focusing on and where do we go from here? *The Urban Review, 51*, 599-637. https://doi.org/10.1007/s11256-019-00534-1

Blackburn, L. (2019). *Toward a trauma-informed pedagogy* [Doctoral dissertation, Michigan State University]. ProQuest Dissertations Publishing.

Bowman, R. F. (2018). Teaching and learning in a storytelling culture. *Clearing House, 9*(3), 97-102.

Braganza, B. (2020). *Community violence, trauma and healing in the Jane and Finch community*. https://www.socialconnectedness.org/wp-content/uploads/2020/10/PDF-Community-Violence-Trauma-and-Healing-in-the-Jane-and-Finch-Community.pdf

Brandford, D. (2020). The mental health of Black men: Stabilizing trauma with emotional intelligence. *School of Professional Studies, 46*, 1-43.

Carter, P. L., & Welner, K. G. (2013). *Closing the opportunity gap: What America must do to give every child an even chance*. Oxford University Press.

Causadias, J. M., Alcalá, L., Morris, K. S., Yaylaci, F. T., & Zhang, N. (2022). Future directions on BIPOC youth mental health: The importance of cultural rituals in the COVID-19 pandemic. *Journal of Clinical Child & Adolescent Psychology*, *51*(4), 577-592. https://doi.org/10.1080/15374416.2022.2084744

Chioneso, N. A., Hunter, C. D., Gobin, R. L., McNeil Smith, S., Mendenhall, R., & Neville, H. A. (2020). Community healing and resistance through storytelling: A framework to address racial trauma in Africana communities. *Journal of Black Psychology*, *46*(2-3), 95-121. https://doi.org/10.1177/0095798420929468

City of Toronto. (2021). *Humber River-Black Creek Ward Profile*. https://www.toronto.ca/wp-content/uploads/2024/01/8c7d-CityPlanning-2021-Census-Profile-Ward-7.pdf

Clarke, V., & Braun, V. (2017). Thematic analysis. *The Journal of Positive Psychology*, *12*(3), 1-5. https://doi.org/10.1080/17439760.2016.1262613

Colour of Poverty- Colour of Change. (2019). *Fact sheets.* https://colourofpoverty.ca/fact-sheets/

Creswell, J. W., & Clark, V. L. P. (2017). *Designing and conducting mixed methods research.* Sage publications.

Day, J., Ji, P., DuBois, D. L., Silverthorn, N., & Flay, B. (2016). Cumulative social-environmental adversity exposure as predictor of psychological distress and risk behavior in urban youth. *Child and Adolescent Social Work Journa*l, *33*(3), 219-235. https://doi.org/10.1007/s10560-015-0421-5.

Denzin, N., & Lincoln, Y. (2000). *Introduction: The discipline and practice of qualitative research. In Handbook of Qualitative Research. London.* Sage Publications.

Dixson, A. D., & Rousseau, C. K. (2016). *Critical race theory in education.* Taylor & Francis.

Eizadirad, A, Jones, D., Leslie, G., & Grant, T. (2024). Remembering lost lives and healing from trauma: Homicides, incarceration, and pain-driven advocacy in the Jane and Finch community. *Journal of Culture and Values in Education*, *7*(3), 1-26. https://doi.org/10.46303/jcve.2024.25

Eizadirad, A., Campbell, A., & Sider, S. (2022). Centering pedagogies of pain and suffering by embracing our wounds and scars. In A. Eizadirad, A. Campbell, & S. Sider (Eds.), *Counternarratives of pain and suffering as critical pedagogy: disrupting oppression in educational contexts* (pp. 1-13). Routledge.

Eizadirad, A., & Sider. S. (July 2020). *Schools after coronavirus: Seize 'teachable moments' about racism and inequities*. The Conversation. https://theconversation.com/schools-after-coronavirus-seize-teachable-moments-about-racism-and-inequities-142238

Eizadirad, A. (2017). The university as a neoliberal and colonizing institute; A spatial case study analysis of the invisible fence between York University and the Jane and Finch neighbourhood in the City of Toronto. *Journal of Critical Race Inquiry*, *4*(1), 25-53. https://doi.org/10.24908/jcri.v4i1.6036

Gajaria, A., Guzder, J., Rasasingham, R. (2021). What's race got to do with it? A proposed framework to address racism's impacts on child and adolescent mental health in Canada. *Journal of the Canadian Academy of Child Adolescent Psychiatry*, *30*(2), 131-137.

Gallagher-Mackay, K., Srivastava, P., Underwood, K., Dhuey, E., McCready, L., Born, K., Maltsev, A., Perkhun, A., Steiner, R., Barrett, K., & Sander, B. (2021). COVID-19 and education disruption in Ontario: Emerging evidence on impacts. *Science Briefs of the Ontario COVID-19 Science Advisory Table*, *2*(34). https://doi.org/10.47326/ocsat.2021.02.34.1.0

Garo, L. A., & Lawson, T., (2019). My story, my way: Conceptualization of narrative therapy with trauma-exposed black male youth. *Urban Education Research and Policy*, *6*(1), 47-65.

Gorski, P. C. (2018). *Reaching and teaching students in poverty: Strategies for erasing the opportunity gap.* Teachers College Press.

Generation Chosen, (2024). *Generation Chosen.* https://www.generationchosen.ca/

Government of Canada, (2022). *Overrepresentation of Black people in the Canadian Criminal Justice System*. Research and Statistics Division. https://www.justice.gc.ca/eng/rp-pr/jr/obpccjs-spnsjpc/pdf/RSD_JF2022_Black_Overrepresentation_in_CJS_EN.pdf

Hanna, K. B. (2019). Pedagogies in the flesh: Building an anti-racist decolonized classroom. *Frontiers: A Journal of Women Studies*, *40*(1), 229-244.

Imad, M. (2020). *Seven recommendations for helping students thrive in times of trauma.* https://www.insidehighered.com/advice/2020/06/03/seven-recommendations-helping-students-thrive-times-trauma

James, C. (2017). *Towards race equity in education: The schooling of Black students in the Greater Toronto Area.* https://edu.yorku.ca/files/2017/04/Towards-Race-Equity-in-Education-April-2017.pdf

Jones, S. M., & Boufard, S. M. (2012). *Social and emotional learning in schools: From programs to strategies* (Social Policy Report No. 26.4). Society for Research in Child Development. https://srcd.onlinelibrary.wiley.com/doi/10.1002/j.2379-3988.2012.tb00073.x

Knoester, M., & Au, W. (2017). Standardized testing and school segregation: like tinder for fire? *Race Ethnicity and Education*, *20*(1), 1-14. https://doi.org/10.1080/13613324.2015.1121474

Leonardo, Z. (2013). The story of schooling: Critical race theory and the educational racial contract. *Discourse: Studies in the Cultural Politics of Education*, *34*(4), 599-610. https://doi.org/10.1080/01596306.2013.822624

Lopez, R. G. (2003). The (racially neutral) politics of education: A critical race theory perspective, *Educational Administration Quarterly*, *39*(1), 68-94. https://doi.org/10.1177/0013161X02239761

Matias, C. E. (2016). *Feeling white: Whiteness, emotionality, and education*. Brill Sense.

Maynard, R. (2022). *Canadian education is steeped in anti-Black racism.* The Walrus. https://thewalrus.ca/canadian-education-is-steeped-in-anti-black-racism/

McCallops, K., Barnes, T. N., Jones, I., Nelson, M., Fenniman, J., & Berte, I. (2019). Incorporating culturally responsive pedagogy within social-emotional learning

interventions in urban schools: An international systematic review. *International Journal of Educational Research*, *94*(1), 11-28.

McMurtry, R., & Curling, A. (2008). *The review of the roots of youth violenc*e. Service Ontario Publications. https://youthrex.com/wp-content/uploads/2019/05/The-Roots-of-Youth-Violence-vol.-1-Findings-Analysis-and-Conclusions-2008.pdf

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Sage Publications.

Narain, S. (2012). The re-branding project: The genealogy of creating a neoliberal Jane and Finch. *Journal of Critical Race Inquiry, 2*(1), 54-94. https://doi.org/10.24908/jcri.v2i1.4295

Pickens, I. (2016). Laying the groundwork: Conceptualizing a trauma-informed system of care in juvenile detention. *Journal of Infant, Child, & Adolescent Psychotherapy*, 15(3), 220-230. doi:10.1080/15289168.2016.1214452

Plano Clark, V. L., & Creswell, J. W. (2015). *Understanding research: A consumer's guide* (2nd ed.) Pearson.

Richardson, C. (2008). "Canada's toughest neighbourhood": Surveillance, myth, and orientalism in Jane-finch (master's thesis). St. Catharines: Brock University.

Sangalang, C. C., Becerra, D., Mitchell, F. M., Le, T. N., Kim, I., & Dondero, M. (2020). Healing together: The impact of community identity on the collective well-being of Asian American college students. *Cultural Diversity and Ethnic Minority Psychology*, *26*(4), 548-562.

Skinner-Osei, P., Mangan, L., Liggett, M., Kerrigan, M., & Levenson, J. S. (2019). Justice-involved youth and trauma-informed interventions. *Justice Policy Journal. 16*(2), 1-25.

Solinger, R., Fox, M., & Irani, K. (2008). *Telling stories to change the world: Global voices on the power of narrative to build community and make social justice claims.* Routledge.

Statistics Canada. (2021). *Census profile*. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E

Statistics Canada. (2016). *Census profile*. https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E

Substance Abuse & Mental Health Services Administration (SAMHSA). (2015). *Trauma-informed approach and trauma-informed interventions.*

Ticar, J. E., & Edwards, F., (2022). Toward holistic and community-based interventions in the mental health of Black and Filipino youth. *Intersectionalities, A Global Journal of Social Work Analysis, Research, Polity, and Practice*, *10*(1), 52-68. https://doi.org/10.48336/IJIEYD8705

Toronto Foundation. (2023). *Toronto's vital signs: 2023 Findings*. https://torontofoundation.ca/powerofus

Williams, C., Jones, D., & Bailey, R. (2013). *From the margins: Building curriculum for youth in transition*. Ministry of Justice & Youth Association for Academics, Athletics and Character Education.

Yancy, G. (2016). *Black bodies, white gazes: The continuing significance of race in America.* Rowman & Littlefield.

Zarifsanaiey, N., Mehrabi, Z., Kashefian-Naeeini, S., & Mustapha, R. (2022). The effects of digital storytelling with group discussion on social and emotional intelligence among female elementary school students. *Cogent Psychology*, *9*(1), 1-16. https://doi.org/10.1080/23311908.2021.200487

Experiences of International Students in Postsecondary Education: A Literature Review

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Abstract

The purpose of this literature review is to describe the educational experiences of international students enrolled in English-medium postsecondary institutions. Because the United States, Canada, the United Kingdom, and Australia currently host the largest international student populations globally, enrollment statistics for each country are presented. A systematic review of 70 peer-reviewed publications was conducted to identify key findings related to the experiences of international students in English-medium postsecondary education. Data were collected and analyzed to ensure the reliability and validity of the results. Findings indicate that academic English proficiency significantly influences the experiences of international students. Moreover, a key challenge for these students often lies in navigating and adapting to the unfamiliar pedagogical approaches employed within host institutions. Finally, the well-being and academic success of international students are significantly influenced by sociocultural factors, surrounding acceptance, integration, and experiences of discrimination. The paper concludes with a summary of the results and a discussion of possible avenues for future research.

Keywords: international students, postsecondary education, higher education, experiences, barriers

Beyond academic credentials, many international students studying abroad gain life-changing experiences that significantly broaden their global perspectives. Despite encountering challenges related to unfamiliar academic structures, pedagogical approaches, and cultural norms, most international students successfully navigate within their new environment and thrive in their studies. In 2022, a remarkable 6.9 million students opted to pursue the transformative experience of studying abroad, showcasing the growing global appeal of international education (Project Atlas, 2024). The commitment to internationalizing postsecondary education has become a strategic priority for many nations. In the past decade, the four most popular English-delivery postsecondary destinations for international students were the United States (1,126,690 million students), Canada (842,760 million students), the United Kingdom (758,855 million students), and Australia (437,485 million students) (Project Atlas, 2024).

The purpose of this literature review is to describe the educational experiences of international students enrolled in English-medium postsecondary institutions. To address the research purpose, in what follows, I established clear research delimitations and provided concise definitions of key terms. Thereafter, I provide background information on international students in the United States, Canada, the United Kingdom, and Australia. Subsequently, I detail the data collection and analysis procedures. The findings are then presented and organized into three key themes: academic English proficiency, pedagogical approaches, and sociocultural issues. I conclude by providing possible suggestions for future research.

Delimitations and Significance of the Research

Delimitations define the scope of the study by explicitly specifying what is included and excluded from the investigation. Transparency regarding these factors is crucial for conducting rigorous research and enhancing the transferability and generalizability of the findings. The first delimitation is that the findings are limited to research published within the last ten years (i.e., 2016–2025). This focus on recent literature is a strength of the paper, because the findings reflect current knowledge. This restricted timeframe also enabled me to present the findings concisely within the word limit required for a publishable academic journal article. Second, I limited my research to data gathered from Canada, the United Kingdom, Australia, and the United States, because these four countries are the most popular destinations for international students in postsecondary programs. As a final point, the terms "international student" and "postsecondary education" need to be addressed. Herein, international students are defined as "students who study at higher education institutions outside their countries" (IGI Global, 2022, para. 1), and postsecondary education is any level of institutional study after completing high school (e.g., trade schools, colleges, and universities). In this paper, the terms postsecondary education and higher education are used interchangeably.

For myriad reasons, the topic of international students in postsecondary education is significant. Excluding the COVID-19 period, international student enrollment has grown significantly over the past decade, and international students constitute a substantial portion of the total enrollment in many English-medium postsecondary programs. With the international student population well-established in these institutions, it is essential to understand their academic, social, psychological, and cultural experiences. This knowledge enables educators to adopt effective pedagogical practices that enhance learning, support mental health, and promote overall student well-being. This research is also significant, because it supports collaboration and innovation among locally and internationally diverse populations. Such robust international collaborations cultivate a dynamic environment that both fosters academic excellence and drives cutting-edge

research within and across institutions. Furthermore, international students, like all students, have an inherent right to access high-quality educational services and support. However, many English-speaking institutions, unfortunately, fall short of adequately supporting the unique needs of their international student populations. This shortfall includes limited academic resources, insufficient assistance with housing, and a lack of adequate scholarship opportunities (Monaghan, 2018). Such issues have been highlighted by researchers such as Turnage (2017), who noted that international students are often an "overlooked population" (para. 1). With increasing numbers of international students attending English-medium institutions, postsecondary organizations have a fiduciary responsibility to create culturally and social just, research-grounded policies and practices promoting international student success (Jabeen et al., 2019; Ma, 2022). This timely and crucial information is designed to assist researchers, policymakers, educators, and community leaders in developing comprehensive and inclusive strategies that effectively address the specific needs of international students.

Background and Demographics

Many educational institutions actively recruit international students due to academic, social, and financial advantages. International students foster stronger academic, economic, and social ties between their home countries and the host country. These ties are strengthened through increased business, trade, investment, research collaborations, and greater cultural understanding. However, international students often face significantly higher tuition costs, typically paying two to three times the amount charged to domestic students. This situation raises ethical concerns, with some critics arguing that international students are often treated as "cash cows" by institutions primarily focused on generating revenue (Weber et al., 2024, p. 538). The high tuition fees paid by international students often subsidize the shortfall in government funding for education. As Hurley (2024) starkly observed, "no university could function... without the revenue from international student fees" (para 20), highlighting the growing financial dependence of many institutions on this revenue stream. Furthermore, international students make significant contributions to the local economy by injecting substantial funds through tuition fees, living expenses, and spending on goods and services. This economic impact extends beyond universities, benefiting local businesses and communities. For example, in the United Kingdom during the 2018–2019 school year, the economic benefit of international postsecondary students was £28.8 billion, while the costs were £2.9 billion (Universities UK, 2022). Despite primarily pursuing academic credentials, international students also fill important roles in the host country's labor market (Crossman et al., 2021). International students are a cornerstone of many universities, enriching academic life, fostering innovation, and contributing significantly to the economic and cultural development of the host nation.

What percentage of postsecondary students in top-hosting countries are international students? In the 2022–2023 academic year, international students comprised approximately 6% of the total student population in U.S. postsecondary institutions (Stewart-Rozema & Pratts, 2023), or about 1.1 million international students (Open Doors, 2025). In Canada within the past decade, colleges and universities have experienced a significant surge in international student enrollment with the number of international students doubling. For the 2022–2023 school year, the international student populace accounted for 21% of Canadian postsecondary enrolments (Statistics Canada, 2024). International students currently account for more than 30% of undergraduate enrollment at the University of Toronto (2023), and the university aims to increase this number. Current United Kingdom (UK) statistics show that international students comprise

26% of the total student population (Bolton et al., 2024). The London School of Economics and Political Science in the UK boasts the highest international student enrollment, with a remarkable 71% of its student body comprised of international students (UniScholars, 2024). According to a recent OECD (2024) report, international students account for 23% of all enrollments in Australian postsecondary institutions. A review of this information highlights that in Canada, the UK, and Australia, international students represent about one-fourth of the student population. International student numbers in the United States are also on the rise.

Description of Data Collection and Analysis

Fink (2020) defined a literature review as a "systematic, explicit, and reproducible method of identifying, evaluating, and synthesizing the existing body of completed and recorded work produced by researchers, scholars, and practitioners" (p. 6). This literature review commenced with a data collection phase. Utilizing the University of Prince Edward Island's library database system, Google Scholar, Sage Premier, and ResearchGate, an extensive online search was conducted. The resulting data encompassed a wide range of scholarly sources, including peer-reviewed books, book chapters, journal articles, dissertations, and conference papers. Thereafter, a targeted search of specific journals publishing studies about international students and postsecondary education was conducted. Main search terms (and their combination) included: "international student," "pedagogy," "experience," "culture," "social," "positive," "challenges," "acculturation," "student adjustment," "undergraduate," "graduate," "university," "postsecondary education," and "higher education." The dominant exclusion criteria were non-peer-reviewed literature and peer-reviewed studies older than 10 years.

During the initial screening phase, titles, abstracts, and/or introductory sections of over 120 online documents were carefully examined to assess their relevance to the research topic. Subsequently, promising documents were electronically saved for further in-depth review. The search also extended to the local university library, where relevant books were identified and accessed. Following an initial review, a more rigorous examination of the saved documents was conducted. This in-depth analysis revealed that only 70 documents directly addressed the research purpose. A thematic data analysis was conducted on these documents. Utilizing a qualitative approach (Patton, 2015), the author systematically coded the data, identifying and categorizing recurring patterns, themes, and regularities. These identified themes were then sorted and analyzed. More specifically, each article was analyzed by carefully reading and noting keywords, findings, and significant phrases. After several documents were processed in such a manner, similar codes started to repeat, which created themes and sub-themes.

Findings

Analysis of the data on the educational experiences of international students in English-medium postsecondary institutions revealed three key themes related to the academic English language, the pedagogical approaches of host institutions, and the challenges and opportunities related to sociocultural acceptance and integration. Below, each of these themes is further elaborated upon using sub-themes.

Academic English

The academic English proficiency of international students significantly influences their overall educational experiences. These academic English experiences encompass a range of factors, including proficiency in understanding both written and spoken English, navigating local and

foreign accents, interpreting regional jargon, adapting to the rapid pace of spoken English, and building confidence to communicate effectively in front of others.

Proficiency

Research consistently highlights English language proficiency as the most significant academic challenge encountered by international students in the classroom setting (e.g., Alqudayri & Gounko, 2018; Bai & Wang, 2022a; Gautam et al., 2016; Heng, 2017, 2018; Igwe et al., 2020; Jackson & Chen, 2018; Le et al., 2017; Ma, 2020; Munna, 2020; Ogunsanya et al., 2018; Park et al., 2017; Tang et al., 2018). Even with a general understanding of written English, international students often encounter significant challenges when engaging with academic literature (Liu, 2016; Schneider, 2018). International students have difficulty understanding local English accents, foreign English accents, and local jargon (Bai & Wang, 2022a, Le et al., 2017; Lindner & Margetts, 2022; Ploner, 2018; Rao, 2017). In a study by Bai and Wang (2022a) with 22 Chinese students in Australian higher education, 19 reported significant difficulty understanding their instructors' accents. Nine of these participants conveyed that they had little to no understanding of what their instructor was saying during the first one to two months. In Wang's (2016) Canadian research focusing on five international Chinese students who quit their program before graduating, students revealed that their greatest obstacle was English speaking and writing. For many international students, local jargon, fast-paced speech, academic reading, academic writing, and local English accents are learning obstacles impeding postsecondary success. Hepworth et al. (2018) found that English proficiency levels, as measured by standardized tests, emerged as the most critical factor influencing academic success among international students.

Reticence To Speak

Research verifies that international students are often reticent to speak during class discussions (Kerridge & Simpson, 2021). Jackson and Chen (2018) conducted a comprehensive, multi-national study (123 survey respondents and 19 personal interviews) with Chinese exchange students in the United States, the United Kingdom, and Australia. Fast-paced classroom discussions were identified by participants as the most challenging aspect of their overseas learning experience. A significant number of international students experience anxiety, shyness, and embarrassment when participating in open-class discussions, hindering their active engagement in the learning process (Jackson & Chen, 2018; Lindner & Margetts, 2022; Matsunaga et al., 2021; Yu, 2018). Many international students lack confidence in speaking English, especially in front of their teachers and classmates (Bai & Wang, 2022b; Wang & Freed, 2021; Xiao, 2024). Some international students are concerned that, after answering or commenting on a question, they will not understand the teacher's response (Bai & Wang, 2022b; Freeman & Li, 2019). The cognitive process of formulating thoughts in a second language and then translating them into English can be time-consuming, a point often exacerbated by the limited response time typically afforded by instructors during classroom discussions (Heng, 2018). In Xiao's (2024) qualitative study with six Chinese participants, students expressed a strong desire to participate in classroom discussions, but they felt they could not express themselves fluently and accurately. Both directly and indirectly, instructors and institutions sometimes foster a culture of silence for international students, thereby limiting their access to insightful, inclusive classroom discussions and enriching academic experiences.

Writing Challenges

Many studies noted that international students often struggle to adapt to the conventions and styles of Western academic writing, including citation and referencing styles. While Chinese written discourse may emphasize subtlety and indirectness, Western academic writing typically values clear, concise, and direct expression (Bai & Wang, 2022a). In Heng's (2017) research of 18 international students (predominantly Chinese) studying in the United States, a significant challenge emerged. Participants were unfamiliar with the expected argumentative essay structure. This structure, common in Western academia, typically requires a clear introduction, a well-developed body of arguments, and a strong concluding statement. Similarly, in Ravichandran et al.'s (2017) study of 15 international graduate students from 11 different countries, the researchers identified a range of challenges associated with navigating the conventions of Western academic writing. These issues included English grammar, English vocabulary, academic formatting, the organization of information, the flow or transition of information, the critical thinking process, the formulation of an argument, the provision of evidence, and the formation of new and concluding ideas. Likewise, in Rao's (2017) study, both Russian and Chinese international students reported significant challenges in adapting their writing to the conventions of Western academic discourse. Specifically, the students struggled to incorporate key elements such as a clear thesis statement, well-defined topic sentences, and a concise concluding statement. In Chauhan's (2021) dissertation research, 10 international students at an American university reported experiencing significant challenges across various aspects of academic writing, including content development, organizational structure, vocabulary usage, genre awareness, grammatical accuracy, and proper citation and referencing practices. Mastery of these specialized Westernized writing skills often necessitates dedicated instruction, which is frequently absent from core academic curricula.

Pedagogical Approaches

The second theme focuses on pedagogical practices and classroom culture. Sub-themes include foreign teaching methods, open-ended assignments, independent learning, critical thinking, lack of international content, and unfamiliar mannerisms.

Foreign Teaching Methods

Many international students are confused by host-country teaching methods and learning expectations. Research consistently demonstrates that international students often experience surprise, frustration, and even anxiety when confronted with Westernized interactive learning methods, such as active learning strategies (e.g., including in-class discussions, debates, and group work activities), hands-on learning (e.g., activities emphasizing practical application and experiential learning), and dynamic assessment methods (individualized homework assignments, oral presentations, and creative projects) (Bai & Wang, 2022a; Cena et al., 2021; Leong, 2017; Newsome & Cooper, 2017; Preston & Boateng, 2024; Preston & Wang, 2017). In Heng's (2023) study, 18 Chinese undergraduate students in the United States experienced confusion and discomfort with dominant pedagogical approaches. They attributed this discomfort to the stark contrast between the Chinese emphasis on rote memorization, teacher-centered instruction, and respect for authority in their home country and the more student-centered, interactive learning environment prevalent in American higher education. In an American study involving eight graduate students in the Education and Tourism fields, international students were baffled by having a grade partially associated with active oral participation during class time. In their home

country, active participation was reflected in written midterms and final examinations (Sato & Hodge, 2018).

Open-Ended Instructions

Many international students find themselves initially surprised or even overwhelmed by the level of academic freedom and autonomy afforded to students while completing assignments. In Le et al.'s (2017) study involving 22 Vietnamese students in Australia, participants reported difficulties in adapting to the more student-centered, passive pedagogical approach of instructors, particularly when encountering open-ended homework assignments that emphasized independent learning and critical thinking. Participants anticipated a more teacher-centered approach to instruction, expecting their professors to primarily lecture and provide assignments with clear and direct answers. In Newsome & Cooper's (2017) study of 18 international students at a British university, participants expressed discomfort with the ambiguity inherent in assignments where instructors provided only broad guidelines. In Bai and Wang's (2022b) study, international students sought guidance from their instructor regarding the appropriate format for completing an assignment. However, the instructor indicated that it was the students' responsibility to determine the correct approach. For many international students, the shift towards personalized and creative learning demands can be a significant source of confusion and frustration, potentially impacting their academic performance and overall well-being (Heng, 2018; Kaya, 2020; Le et al., 2017; Lindner & Margetts, 2022; Liu, 2016; Matsunaga et al., 2021; Newsome & Cooper, 2017).

Independent Learning

In many English-medium postsecondary institutions, innovative pedagogical approaches often emphasize student autonomy, placing significant responsibility on students for independent reading and learning. In Jackson and Chen's (2018) study, undergraduate international Chinese students reported feeling overwhelmed by the volume and nature of independent reading assignments, which were crucial for active participation in ensuing interactive classroom discussions. Freeman and Li's (2019) research with six international students in Australia revealed a stark contrast in host and host country course loads. In their home countries, international students were accustomed to enrolling in a significantly higher number of courses per semester, typically ranging from 10 to 15. At their host Australian university, they had four courses per semester. However, a major challenge for many international students was the increased level of independent learning required within each course, demanding significantly more effort and time compared to their prior educational experiences. This included key skills such as independently selecting assignment topics, conducting academic research, and completing creative projects (Freeman & Li, 2019). For Lucas's (2019) narrative research involving Asian international graduate students in the United States, the instructor required international students to be inquisitive, independent thinkers in their written assignments. These studies collectively demonstrate that, ironically, successful academic integration for international students necessitates an ability to independently complete schoolwork.

Critical Thinking

In many Western, individualistic cultures, the ability to engage in critical analysis and express oneself through insightful writing is highly valued (Lucas, 2019). English-medium postsecondary institutions tend to prioritize the development of critical thinking and writing skills, integrating them across their curricula. Research consistently demonstrates that many international students encounter significant challenges in effectively integrating critical thinking skills into their

academic assignments (Jaffar, 2025; Lucas, 2019; Samanhudi, 2021; Zhong & Cheng, 2021). This critical thinking ability encompasses the capacity to reason, judge, analyze, argue, justify, and effectively communicate information. In contrast, the predominant collectivist cultures of many Asian countries often prioritize conformity and social harmony, which may not always align with the emphasis on independent creativity prevalent in some Western educational contexts. Li's (2016) qualitative study with 20 undergraduate and graduate international students revealed that participants struggled to grasp the concept of "critical writing," highlighting potential differences in cultural understandings of academic discourse. In this study, some participants, either consciously or unconsciously, associated critical thinking and writing with challenging authority figures (i.e., instructors and established scholars). This perception, prioritizing respect for authority and harmonious relationships, can hinder the development of critical thinking skills in some international students. In other words, openly questioning a teacher's ideas or critiquing subject matter may be perceived as culturally disrespectful (Rao, 2017). Many international students tend to harmoniously agree with instructors, people of authority, classmates, and/or published literature (Zhong & Cheng, 2021), which is often not conducive to critical analysis of content.

Lack of International Curriculum Content

Research suggests that international students studying abroad often have limited opportunities to engage with curriculum content from their home countries, which can both hinder their understanding of global perspectives and their ability to connect their own cultural experiences. In Heng's (2018) study, international students reported significant challenges in comprehending course content due to their unfamiliarity with the host country's cultural context. Issues included a lack of knowledge about prominent authors, local companies, national historical events, political figures, and references to local religions. In Gopal's (2016) Canadian research, the international student reported experiencing a graduate curriculum that predominantly focused on information and perspectives from North American and English-speaking countries, neglecting global perspectives. Moreover, when participants attempted to apply course concepts to their home country contexts, the instructor sometimes implicitly or explicitly positioned the Western educational system as superior, potentially hindering critical engagement with alternative perspectives and fostering a sense of cultural dissonance among the students. Research by Ai (2017) and Lyken-Segosebe (2017) suggested that acculturative pressure can arise from Western-centric biases within some academic settings, potentially leading international students to feel compelled to conform to dominant perspectives and values. However, research shows that international students want their culture recognized in the host curriculum (e.g., Guo & Guo, 2017; Liu, 2017; Taveres, 2024). In a Canadian study involving 26 undergraduate students, Guo and Guo (2017) found a significant discrepancy between the program's advertised focus on optimizing the experiences of international students and the students' actual experiences. Participants reported feeling disconnected from the curriculum, citing a lack of relevance and a limited ability to connect course content to their own cultural experiences. Both Preston & Wang (2017) (Canadian research with 21 international students) and Wang and Freed's (2021) (an American-based study with 10 international graduate students) found that participants rarely, if ever, encountered references to their own cultures within course materials or discussions. Wang & Freed (2021) suggested that instructors teaching international students may have limited knowledge or experience regarding the cultural and lived realities of their students.

Priya and Tapis' (2016) research, which involved 10 international students studying in the United States, offered numerous examples of how a lack of cultural consideration can significantly

impact learning experiences and academic engagement. As part of a business course, one participant shared an experience in which students were tasked with creating a business plan for a funeral home. One international student struggled to comprehend the concept of a funeral home, as such an institution was nonexistent in their home country. Another student from India explained that in their culture, death was rarely discussed, making the assignment both unsettling and distressing. This highlights a key challenge for international students: while studying abroad is intended to provide valuable experience in the host country, it often comes with the pressure to abandon their cultural heritage and fully adopt the norms and practices of the host institution.

Cultural Mannerisms

Culture can be defined as the shared and accepted language, beliefs, attitudes, values, customs, behaviors, symbols, and artifacts that distinguish a particular group of people. Cultural differences can significantly impact communication and understanding. In Li's (2016) study, some international students expressed surprise or discomfort with certain classroom practices observed in their host country, such as instructors' casual attire, sitting on classroom tables, and allowing students to eat in class. Also, in this study, international students found it strange when instructors utilized humor, engaged in casual conversation with students, or promoted a relaxed and informal classroom atmosphere. Heng (2018) reported that some international students experienced difficulties in understanding and appreciating the humor used by their instructors. Cultural differences in humor styles and communication norms can lead to misunderstandings and potential feelings of exclusion for international students. These interactions, while common in some Western educational contexts, often differ significantly from the more formal and hierarchical teacher-student relationships prevalent in their home cultures. Some international students find it difficult to read cursive or handwritten English, either written on the whiteboard or as feedback on their papers (Kerridge & Simpson, 2021). In Newsome and Cooper's (2017) research, one participant described feeling uncomfortable addressing the male instructor by his first name, a practice that differed significantly from their cultural norms, where addressing teachers with formal titles such as "Sir" is considered appropriate. This finding aligns with other research (Elliot et al., 2016; Jackson & Chen, 2018). In an Australian study, a Chinese participant observed that local students frequently interrupted the instructor with questions during class, which contrasted sharply with their own cultural norms where students typically defer to the instructor and ask questions after class (Bai & Wang, 2022b). This observation highlights the potential for cultural misunderstandings in classroom settings, as student-teacher interaction styles can vary significantly across different cultural contexts.

Sociocultural Issues

Across multiple studies, a third key finding is that international students frequently encounter a range of sociocultural challenges, including social isolation, feelings of exclusion, identity tension, and potential experiences of discrimination. These challenges can significantly impact their academic performance, social integration, and overall confidence and well-being.

Social Disconnection and Alienation

A prominent theme emerging from peer-reviewed research highlights the significant sociocultural challenges faced by international students (Arkoudis et al., 2019; Avenido, 2023; Contreras-Aguirre & Gonzalez, 2017; Guo & Guo, 2017; Newsome & Cooper, 2016; Tang et al., 2018; Tran, 2020). Preston and Wang (2017) found that, although most international students arrived in the host country with aspirations of forming local friendships, many ultimately experienced a sense of

social isolation from domestic students as they progressed through the program. Arkoudis et al.'s (2019) mixed-method research, which studied 393 undergraduate international students at an Australian university, revealed significant social fragmentation between domestic and international students, both on- and off-campus. Notably, in this study, only about 20% of the participants reported having a local friend, highlighting the extent of social disconnection. Some international students reported that, at first, they perceived local students as approachable and friendly; however, over time, they came to view this initial warmth as largely superficial and lacking genuine authenticity (Newman & Cooper, 2016). Liu's (2017) narrative research, conducted with five undergraduate and graduate students in British Columbia, Canada, revealed a striking lack of social integration; participants consistently expressed that they did not have any local friends. Tran (2020) found that international students consistently identified the absence of local friends as the most dissatisfying and isolating aspect of their experience abroad.

Tang et al.'s (2018) American study, which involved focus group interviews with 60 international students in Business and Engineering, revealed that, while most participants expressed a strong desire to network with local students, they faced significant challenges in accessing these social circles and overcoming sociocultural barriers. In other studies, some international students did not interact with locals, because international students had difficulty with certain social behaviors and norms including the use (sometime excess) of alcohol (Elliot, et al., 2016). Furthermore, research by Liu (2016) and Wang (2016) demonstrated that limited language proficiency serves as a significant barrier, severely hindering the development of social connections in social circles. When international students experience social disconnection with local students, they often gravitate toward forming friendships with peers from their own cultural background, seeking familiarity and shared experiences (Li, 2016). Furthermore, Li (2016) explained that while international students strive to maintain their own sociocultural values and behaviors, local students often expect them to assimilate to the norms and customs of the host country, creating a tension between cultural preservation and social integration. When their cultural background appears to hold little value in the host country, they often feel marginalized and disconnected, as if they are outsiders (Alqudayri & Gounko, 2018; Tavares, 2021). When international students encounter social divisions with local students, it often exacerbates feelings of loneliness and intensifies homesickness (Hunter-Johnston & Niu 2019; Meade et al., 2022; Park et al., 2017).

Personal Marginalization and Discrimination

Another key thematic issue in the experiences of international students in postsecondary education is discrimination. In Igwe et al.'s (2020) British study involving 45 international business undergraduate students, group discussions were often dominated by local students, effectively marginalizing international students and limiting their opportunities for active participation. In Matsunaga et al.'s (2021) qualitative research with six Japanese undergraduate students studying in Australia, participants reported feeling that their contributions in class were often sidelined, overlooked, or interrupted by other students, diminishing the international student's sense of academic agency and inclusion. In Gopal's (2016) study, international graduate students reported feeling ostracized when attempting to engage in discussions, as their accents and nonverbal communication, including body language, were often perceived as barriers, hindering their ability to express their ideas and connect with others. Other research has shown that international students often feel their perspectives are disregarded in class due to their accents or language proficiency, further contributing to their sense of exclusion (Guo & Guo, 2017; Wekullo, 2019). Additional

research reveals that international students frequently feel ignored, isolated, and shunned by local students and the broader community, deepening their sense of alienation and exclusion (Arkoudis, 2019; Yakaboski et al., 2018; Yeo et al., 2019). In Ge et al.'s (2019) Canadian ethnographic study involving 12 international students, participants reported that some instructors consistently prioritized responses from local students over those of international students, reinforcing a sense of marginalization in the classroom.

In Ritter's (2016) study, which involved 47 interviews with international students, participants reported witnessing and/or experiencing racial discrimination from domestic peers. This discrimination manifested as a racial hierarchy, further entrenching feelings of inequality and exclusion. Domestic students were observed to selectively interact with students from certain countries, while avoiding engagement with students from other countries, reinforcing social divisions and exclusion. In an Australian study involving Saudi Arabian students, which included 100 survey respondents and seven qualitative interviews, the findings revealed that the majority of participants experienced discrimination (Alsahafi & Seong-Chul, 2017). Van Horne et al. (2018) conducted a large-scale quantitative study involving nearly 4,000 undergraduate international students across nine American universities. The study found that, compared to their domestic peers, international students reported a significantly lower sense of belonging to their host campus and a diminished sense of respect while on campus.

However, other research presents mixed findings regarding discrimination against international students. In Mwangi et al.'s (2019) qualitative study involving 33 Black international undergraduate and graduate students across various American universities, many participants shared experiences of racism and discrimination, while others reported that they did not encounter such challenges, highlighting the varied and complex nature of these experiences. Guo and Guo's (2017) research revealed that while Latino students did not report experiencing discrimination, other international students in the study did, further emphasizing the varying experiences of discrimination based on cultural and ethnic backgrounds. Arafeh (2020)'s research with 10 Saudi Arabian in an American university revealed that they experienced "positive culture shock" (p. 750). These women shared that while studying in an American environment, they did not feel singled out or judged for wearing traditional attire. Instead, they felt that their teachers and classmates showed them respect, fostering an inclusive and accepting atmosphere. This information suggests that international students experience varying levels of discrimination, ranging from none to high, with these experiences often differing based on culture, race, and gender.

Campus Discrimination

In many ways, international students face campus discrimination, particularly when compared to local students. International students often encounter fewer opportunities for research internships, part-time jobs, and other academic or professional experiences, exacerbating their sense of exclusion and limiting their academic and career prospects (Ge et al., 2019; Liu, 2017; Singh, 2023). In Hunter-Johnson and Niu's (2019) study involving 15 Bahamian graduate students at American universities, participants reported experiencing a lack of financial support, limited teaching opportunities, and insufficient access to research opportunities provided by their host institutions. In a mixed-method study involving 28 survey respondents and six interviewees with international students in the United States, participants consistently expressed frustration with on-campus employment. They reported feeling uninformed about the employment process and lacking the social capital necessary to secure quality local references, which further thwarted their

ability to access meaningful job opportunities (Gautam et al., 2016). Marangell et al. (2018) explained that many international students find it difficult to secure employment due to working regulations, lack of familiarity with employment processes, English language competency, or lack of previous work experience in the host country. Cultural discrimination manifested on campus in various ways. For instance, in Tavares' (2024) Canadian postsecondary study, the university cafeteria offered limited food options, with international cuisine being particularly scarce. Despite being required to purchase meal plans, international students faced dietary challenges, which compounded their sense of exclusion.

Summary of Findings

The purpose of this literature review is to describe the educational experiences of international students enrolled in English-medium postsecondary institutions. A critical analysis of research literature highlights that international students' academic English proficiency significantly impacts their educational experiences. Key challenges include understanding written and spoken English, overcoming difficulties with local and foreign accents, interpreting regional jargon, and adapting to rapid speech. Many students, particularly those from non-English speaking backgrounds, face obstacles in academic reading and writing, as well as speaking in class. Anxiety, reticence, and lack of confidence about speaking English hinder their participation in classroom discussions. Additionally, international students struggle with Western academic writing conventions, such as clear argumentation, citation styles, and essay structures. These language barriers are major factors affecting their academic success and overall experience.

Many international students face challenges adapting to the pedagogical approaches of host institutions, which often differ significantly from those in their home countries. Research shows that students can experience confusion, frustration, and anxiety when confronted with Western teaching methods, including active learning, hands-on learning, and dynamic assessments like oral presentations and group work. Additionally, the academic freedom and autonomy in completing open-ended assignments can be overwhelming, because these students are often accustomed to teacher-centered approaches with clear and direct instructions. The emphasis on independent learning, critical thinking, and student autonomy in Western education can also be difficult for students from more collectivist cultures. Furthermore, international students may feel disconnected from the curriculum, which often lacks content relevant to their own cultures, leading to a sense of cultural dissonance. Cultural mannerisms, such as informal classroom practices and differences in communication styles, can also create misunderstandings and discomfort. These factors, collectively, highlight the need for a better understanding of the diverse learning needs of international students to improve their academic integration.

International students often face significant sociocultural challenges in host countries, including social division, isolation, and marginalization. Research shows that many international students struggle to form meaningful connections with local students, leading to feelings of loneliness and homesickness. Despite desires for social integration, students frequently encounter barriers such as language proficiency, cultural differences, and varying social behaviors, which hinder their ability to connect with domestic peers. Moreover, when international students seek to preserve their cultural values, they may face pressure to assimilate, further exacerbating tensions between cultural preservation and integration. Experiences of personal marginalization and discrimination, whether related to accents, nonverbal communication, or racial biases, are common, with many students feeling excluded or overlooked in academic and social settings. While some students report positive experiences, the overall picture reveals that social divisions

and campus discrimination remain. The complex nature of these challenges highlights the importance of fostering a more inclusive and supportive environment for international students.

Future Research

The international student population is inherently diverse and multifaceted, necessitating the provision of tailored educational services and inclusive strategies to effectively support their unique needs and foster a truly inclusive environment. To effectively address and cater to the diverse needs of this student population, targeted and in-depth research is essential. Such research will provide valuable insights into the unique challenges and experiences faced by international students, enabling institutions to develop more informed, responsive, and tailored support systems that better serve this heterogeneous group.

To begin, the experiences of immigrant students, as well as those with refugee status and spousal sponsorship, remain significantly understudied (D'Cruz, 2022). There is a critical gap in understanding the unique educational needs, career aspirations, and personal challenges faced by these students. What are their specific barriers to academic success? How do their backgrounds shape their career trajectories and personal goals? Addressing these questions is essential for developing targeted interventions and support mechanisms that promote equitable opportunities and outcomes for these often-marginalized student populations.

While some research has explored the unique needs of Chinese international students (e.g., Preston & Wang, 2017), there remains a lack of focused studies on the lived experiences of students from other major home countries, such as India and various African nations. Research that specifically examines the experiences of international students from these diverse geographic regions would provide valuable, context-rich insights into their challenges, needs, and aspirations. Such studies would enhance understanding of the complexities and nuances of the international student experience, ultimately informing more tailored support systems and strategies for students from a broader range of cultural backgrounds.

Furthermore, scholars emphasize that meaningful social engagement between international and host students is essential for fostering the academic success and personal well-being of international students (e.g., Ammigan, 2019). This raises an important research question: What types of curricular, extracurricular, and social interactions occur both inside and outside the classroom between international and host students, and how, if at all, do these interactions shape the educational outcomes and lived experiences of international students? Investigating these dynamics can provide a deeper understanding of how cross-cultural engagement impacts students' academic development, social integration, and overall adjustment to life in the host country, ultimately, informing strategies for enhancing the international student experience.

Future research should expand beyond traditional academic programs to explore the diverse experiences of international students in non-degree pathways. For instance, what are the experiences of international students who engage in short courses, such as summer programs or bridge programs, and how do these experiences influence their academic, professional, and personal development?

Equally important, it is crucial to examine the lived experiences of international students who choose to discontinue their educational programs—understanding the factors that lead to such decisions can offer valuable insights into the challenges and barriers faced by this group, ultimately contributing to more effective support structures for all international students.

Lastly, to more accurately assess the long-term impact and effectiveness of postsecondary education, longitudinal studies that track the career trajectories and lifestyle outcomes of international students after graduation are essential.

References

Ai, B. (2017). The communication patterns of Chinese students with their lecturers in an Australian university. *Educational Studies, 43*(4), 484-496. https://doi.org/10.1080/03055698.2017.1293507

Alqudayri, B., & Gounko, T. (2018). Studying in Canada. Experiences of female graduate students from Saudi Arabia. *Journal of International Students, 8*(4), 1736-1747. https://doi.org/10.32674/jis.v8i4.228

Alsahafi, N., & Seong-Chul, S. (2017). Factors affecting the academic and cultural adjustment of Saudi international students in Australian universities. *Journal of International Students, 7*(1), 53–72. https://www.ojed.org/index.php/jis/article/view/245/188

Ammigan, R. (2019). Institutional satisfaction and recommendation: What really matters to international students. *Journal of International Students, 9*(1), 262-281.

Arafeh, A. (2020). Insights into Saudi female international students: Transition experiences. *Journal of International Students, 10*(3), 741-757. https://doi.org/10.32674/jis.v10i3.1111

Arkoudis, S., Dollinger, M., Baik, C., & Patience, A. (2019). International students' experience in Australian higher education: Can we do better? *Higher Education: The International Journal of Higher Education Research, 77*(5), 799-813. https://doi.org/10.1007/s10734-018-0302-x

Avenido, K. (2023). An intersectional analysis of Chinese international students' experiences in postsecondary institutions in British Columbia. *Journal of International Students, 13*(1), 22-39. https://doi.org/10.32674/jis.v13i1.2877

Bai, L., & Wang, Y. X. (2022a). Combatting language and academic culture shock—International students' agency in mobilizing their cultural capital. *Journal of Diversity in Higher Education*. https://psycnet.apa.org/doi/10.1037/dhe0000409

Bai, L., & Wang, Y. X. (2022b). In-class and out-of-class interactions between international students and their host university teachers. *Research in Comparative & International Education, 17*(1), 71-88. https://doi.org/10.1177%2F17454999211038774

Bolton, P., Lewis, J., & Gower, L. (2024). *International students in UK higher education*. https://researchbriefings.files.parliament.uk/documents/CBP-7976/CBP-7976.pdf

Cena, E., Burns, S., & Wilson, P. (2021). Sense of belonging and the intercultural and academic experiences among international students at a university in Northern Ireland. *Journal of International Students, 11*(4), 812-831. https://doi.org/10.32674/jis.v11i4.2541

Chauhan, P. B. (2021). *Academic writing challenges experienced by international students in a Midwest U.S. university: A phenomenological inquiry*. [Doctoral thesis, Minnesota State University]. https://cornerstone.lib.mnsu.edu/etds/1129/

Contreras-Aguirre, C. H., & Gonzalez, G. E. (2017). Experiences of international female students in U.S. graduate programs. *College Student Journal, 51*(1), 33-46. https://files.eric.ed.gov/fulltext/EJ1083286.pdf

Crossman, E., Choi, Y., & Hou, F. (2021). International students as a source of labour supply: Engagement in the labour market during the period of study. *Economic and Social Reports, 1*(11), 1-12. https://doi.org/10.25318/36280001202101100001-eng

D'Cruz, A. M. (2022). *Neither here nor there: A phenomenological study of immigrant students enrolled in Canadian higher education* [Master's thesis, Ontario Institute for Studies in Education]. https://utoronto.scholaris.ca/server/api/core/bitstreams/b4871446-23fa-43bf-983b-152fb6e7c0e0/content

Elliot, D. L., Reid, K., & Baumfield, V. (2016). Beyond the amusement, puzzlement and challenges: An enquiry into international students' academic acculturation. *Studies in Higher Education, 41*(12), 2198-2217.

Freeman, K., & Li, M. (2019). "We are a ghost in the class:" First year international students' experiences in the global contact zone. *Journal of International Students, 9*(1), 19-38. https://doi.org/10.32674/jis.v9i1.270

Fink, A. (2020). *Conducting research literature reviews: From the internet to paper* (5th ed.). Sage.

Gautam, C., Lowery, C. L., Mays, C., & Durant, D. (2016). Challenges for global learners: A qualitative study of the concerns and difficulties of international students. *Journal of International Students, 6*(2), 501-526. https://doi.org/10.32674/jis.v6i2.368

Ge, L., Brown, D., & Durst, D. (2019). Chinese international students' experiences in a Canadian university: Ethnographic inquiry with gender comparison. *Journal of International Students, 9*(2), 582-612. https://doi.org/10.32674/jis.v0i0.272

Gopal, A. (2016). Academic experiences of international graduate students: The Canadian perspective in the context of internationalization. In K. Bista & C. Foster (Eds.), *Exploring the social and academic experiences of international students in higher education institutions* (pp. 21-37). IGI Global.

Guo, Y., & Guo, S. (2017). Internationalization of Canadian higher education: Discrepancies between policies and international student experiences. *Studies in Higher Education, 42*(5), 851-868. https://doi.org/10.1080/03075079.2017.1293874

Heng, T. (2017). Voices of Chinese international students in USA colleges: "I want to tell them that …" *Studies in Higher Education, 42*(5), 833-850. https://doi.org/10.1080/03075079.2017.1293873

Heng, T. T. (2018). Different is not deficient: Contradicting stereotypes of Chinese international students in U.S. higher education. *Studies in Higher Education, 43*(1), 22-36. https://doi.org/10.1080/03075079.2016.1152466

Heng, T. T. (2023). Socioculturally attuned understanding of and engagement with Chinese international undergraduates. *Journal of Diversity in Higher Education, 16*(1), 26-39. https://doi.org/10.1037/dhe0000240

Hepworth, D., Littlepage, B, Hancock, k. (2018). Factors influencing university student academic success. *Educational Research Quarterly, 42*(1), 45-61.

Hsu, C-F., & Huang, I-T. (2017). Are international students quiet in class? The influence of teacher confirmation on classroom apprehension and willingness to talk in class. *Journal*

of International Students, 7(1), 38-52. https://www.ojed.org/index.php/jis/article/view/244/226

Hunter-Johnson, Y., & Niu, Y. (2019). Bahamians as international adult learners determined for academic success: Challenges and required support system. *Journal of International Students, 9*(4), 1038-1054. https://orcid.org/0000-0001-7884-4578

Hurley, P. (2024). International students are returning to Australia, but they are mostly going to more prestigious universities. *The Times*. https://www.thetimes.com.au/world/18070-international-students-are-returning-to-australia-but-they-are-mostly-going-to-more-prestigious-universities

IGI Global. (2022). *What is international students?* https://www.igi-global.com/dictionary/international-students/33499

Igwe, P. A., Rahman, M., Ohalehi, P., Amaugo, A., & Anigbo, J. A. (2020). Responsible education: What engages international postgraduate students—Evidence from UK. *Journal of Global Responsibility, 11*(4), 363-376. https://doi.org/10.1108/JGR-03-2020-0036

Jackson, J., & Chen, X. (2018). Discussion-based pedagogy through the eyes of Chinese international exchange students. *Pedagogies: An International Journal, 13*(4), 289-307. https://doi.org/10.1080/1554480X.2017.141126

Jabeen, R., Wang, P., & Cheng, L. (2019). Academic engagement, social interaction, and academic socialization: English as an Additional Language in Higher Education. *BC TEAL Journal, 4*(1), 95-107. https://doi.org/10.14288/bctj.v4i1.337

Jaffar, K. (2025). Critical thinking skills: Challenges faced by international students in finance and accounting. *Journal of Interdisciplinary Studies in Education, 14*(2), 176-196.

Kaya, J. (2020). Inside the international student world: Challenges, opportunities, and imagined communities. *Journal of International Students, 10*(1), 124-144. https://doi.org/10.32674/jis.v10i1.103

Kerridge, C. P., & Simpson, C. (2021). Tutor and international student perspectives on an action research project: Use of a business strategy simulation with mixed nationality cohorts. *Journal of International Education in Business, 14*(2), 240-258. http://dx.doi.org/10.1108/JIEB-07-2019-0034

Le, H., Koo, F. K., Arambewela, R., & Zutshi, A. (2017). Voices of dissent: Unpacking Vietnamese international student experience. *International Journal of Educational Management, 31*(3), 280-292. http://dx.doi.org/10.1108/IJEM-07-2015-0099

Leong, P. (2017). Coming to America: Assessing the patterns of acculturation, friendship formation, and the academic experiences of international students at a U.S. college. *Journal of International Students, 5*(4), 459-474. https://www.ojed.org/index.php/jis/article/view/408/325

Li, M. (2016). Learning the rules of the game: Issues affecting academic acculturation of Asian international students in New Zealand universities. In K. Bista & C. Foster (Eds.), *Exploring the social and academic experiences of international students in higher education institutions* (pp. 38-58). IGI Global.

Lindner, K., & Margetts, K. (2022). English language expectations and experiences of Chinese students in Australian secondary schools: Opportunities and challenges. *Asia Pacific Journal of Education*, pp. 1-18. https://doi.org/10.1080/02188791.2022.2044287

Liu, J. (2017). Beyond the cultural approach: Understanding the experiences of Chinese international students in Canada from an intersectionality perspective. *International Journal of Chinese Education, 6*(2), 236-258. https://doi.org/10.1163%2F22125868-12340082

Liu, T. (2016). *Learning experience of Chinese international students in Master of Education program at a mid-sized Ontario university* [Unpublished master's thesis]. University of Windsor. https://scholar.uwindsor.ca/etd/5841/

Lucas, K. J. (2019). Chinese graduate student understandings and struggles with critical thinking: A narrative-case study. *International Journal for the Scholarship of Teaching and Learning, 13*(1), 1-7. https://doi.org/10.20429/ijsotl.2019.130105

Lyken-Segosebe, D. (2017). Acculturative stress and disengagement: Learning from the adjustment challenges faced by east Asian international graduate students. *International Journal of Higher Education, 6*(6), 66-77. http://dx.doi.org/10.5430/ijhe.v6n6p66

Ma, J. (2020). Supporting practices to break Chinese international students' language barriers: The first step to facilitate their social adjustment. *Journal of International Students, 10*(1), 84-105.

Ma, J. (2022). Challenges and strategies facing international students and faculty in U.S. higher education: A comprehensive literature review. *GATESOL Journal, 32*(1), 18-38. https://doi.org/10.52242/gatesol.122

Marangell, S., Arkoudis, S., & Baik, C. (2018). Developing a host culture for international students: What does it take? *Journal of International Students, 8*(3), 1440-1458.

Matsunaga, K., Barnes, M. M., & Saito, E. (2021) Agency and hysteresis encounters: Understanding the international education experiences of Japanese students in Australian universities. *Cambridge Journal of Education, 51*(6), 765-784. https://doi.org/10.1080/0305764X.2021.1926927

Meade, A. F., Ong, C., & Pradhan, S. (2022). "Belonging" at a liberal arts college: Creating emotional and physical spaces of home. In M. Mohamad & J. Boyd (Eds.), *International student support and engagement in higher education: Exploring innovative practices in campus* (pp. 60-75). Routledge.

Monaghan, P. (2018). The case for treating international students fairly. *Chronicle of Higher Education, 64*(36), 25-26.

Munna, A. S. (2020). International students' learning experience on global curriculum. *Journal of Education*, 1-12. https://doi.org/10.1177%2F0022057420972063

Mwangi, C., Daoud, N., Peralta, A., & Fries-Britt, S. (2019). Waking from the American dream: Conceptualizing racial activism and critical consciousness among black immigrant college students. *Journal of College Student Development, 60*(4), 401-420. https://doi.org/10.1353/csd.2019.0037

Newsome, L. K., & Cooper, P. (2016). International students' cultural and social experiences in a British university: "Such a hard life [it] is here." *Journal of International Students, 6*(1), 195-215. https://doi.org/10.32674/jis.v6i1.488

Newsome, L. K., & Cooper, P. (2017). International students' experience of Western pedagogy in a British university. *World Journal of Educational Research, 4*(4), 620-637.

Ogunsanya, M. E., Bamgbade, B. A., Thach, A. V., Sudhapalli, P., & Rascati, K. L. (2018). Determinants of health-related quality of life in international graduate students. *Currents in Pharmacy Teaching and Learning, 10*(4), 413-422. http://dx.doi.org/10.1016/j.cptl.2017.12.005

OECD. (2024). *Education at a glance 2024: OECD indicators*. https://www.oecd.org/en/publications/education-at-a-glance-2024_c00cad36-en.html

Open Doors. (2025). *International students*. https://opendoorsdata.org/annual-release/international-students/#key-findings

Park, H., Lee, M.-J., Choi, G.-Y., & Zepernick, J. S. (2017). Challenges and coping strategies of East Asian graduate students in the United States. *International Social Work, 60*(3), 733-749. https://doi.org/10.1177%2F0020872816655864

Patton, M. Q. (2015). *Qualitative research and evaluation methods: Integrating theory and practice* (4th ed.). Sage.

Ploner, J. (2018). International students' transitions to UK higher education—revisiting the concept and practice of academic hospitality. *Journal of Research in International Education, 17*(2) 164-178. https://doi.org/10.1177%2F1475240918786690

Preston, J. P., & Boateng, S. (2024). Classroom experiences of international students in Canadian postsecondary education. *Futurity Education, 4*(2), 206-224. https://futurity-education.com/index.php/fed/article/view/315/158

Preston, J. P., & Wang, A. (2017). The academic and personal experiences of Mainland Chinese students enrolled in a Canadian Master of Education program. *International Journal of Comparative Education and Development, 19*(4), 177-192. http://dx.doi.org/10.1108/IJCED-05-2017-0006

Priya, K., & Tapis, G. P. (2016). Are American cultural examples losing the international students in U.S. classrooms? *Management Teaching Review, 1*(3), 198-204. http://dx.doi.org/10.1177/2379298116647968

Project Atlas. (2024). *A quick look at global mobility trends*. https://www.iie.org/wp-content/uploads/2024/11/Project-Atlas_Infographic_2024-1.pdf

Roa, P. (2017). Learning challenges and preferred pedagogies of international students: A perspective from the U.S. *International Journal of Educational Management, 31*(7), 1000-1016. https://www.emerald.com/insight/content/doi/10.1108/IJEM-01-2016-0001/full/html

Ravichandran, S., Kretovics, M., Kirby, K., & Ghosh, A. (2017). Strategies to address English language writing challenges faced by international graduate students in the U.S. *Journal of International Students, 7*(3), 3-7. https://doi.org/10.5281/zenodo.570033

Ritter, Z. S. (2016) Globalization of racism: Chinese, Japanese, and Korean international students' racial stereotypes and experiences with cross-racial interactions. In K. Bista & C. Foster (Eds.), *Exploring the social and academic experiences of international students in higher education institutions* (pp. 132-155). IGI Global.

Samanhudi, U. (2021). Reflexive account of an Indonesian international student's challenges and opportunities in a U.K. university's doctoral education program. *Journal of International Studies, 11*(1), 144-155. https://doi.org/10.32674/jis.v11i1.1096

Sato, T., & Hodge, S. R. (2018). Asian international graduate students' academic and social experiences in American higher education. In K. Bista & C. Foster (Eds.), *Exploring the social and academic experiences of international students in higher education institutions* (pp. 1-20). IGI Global.

Schneider, J. (2018). Passages into college writing: Listening to the experiences of international students. *Composition Forum, 40,* pp. 1-14. https://files.eric.ed.gov/fulltext/EJ1196520.pdf

Singh, J. K. N. (2023). Unequal opportunities in accessing employability-related programmes: South Asian graduates' experiences in Australia. *Higher Education Quarterly*. Advanced online publication. https://doi.org/10.1111/hequ.12416

Statistics Canada. (2024). Canadian postsecondary enrolments and graduates, 2022/2023. *The Daily*. https://www150.statcan.gc.ca/n1/daily-quotidien/241120/dq241120b-eng.htm

Stewart-Rozema, J., & Pratts, C. (2023). International student enrollment statistics. *Best Colleges*. https://www.bestcolleges.com/research/international-student-enrollment-statistics/?utm_source=chatgpt.com

Tang, X., Collier, D. A., & Witt, A. (2018). Qualitative study on Chinese students' perception of U.S. university life. *Journal of International Students, 8*(1), 151-178. https://doi.org/10.32674/jis.v8i1.158

Tavares, V. (2021). *International students in higher education: Language identity, and experience from a holistic perspective*. Lexington Books.

Taveres, V. (2024). Feeling excluded: International students experience equity, diversity and inclusion. *International Journal of Inclusive Education, 28*(8), 1551-1568. https://doi.org/10.1080/13603116.2021.2008536

Tran, L. T. (2020). Teaching and engaging international students: People-to-people connections and people-to-people empathy. *Journal of International Students, 10*(3), xii-xvii. https://doi.org/10.32674/JIS.V10I3.2005

Turnage, C. (2017). In higher ed's mental-health crisis, an overlooked population: International students. *Chronicle of Higher Education, 64*(1), 60-71.

Universities UK. (2022). *The costs and benefits of international higher education students to the UK economy*. https://www.universitiesuk.ac.uk/universities-uk-international/insights-and-publications/uuki-publications/costs-and-benefits-international-higher

University of Toronto. (2023). *Enrolment report 2022-23.* https://planningandbudget.utoronto.ca/wp-content/uploads/2023/04/22-23-Enrolment-Report-Final.pdf

Unischolars. (2024). *All about LSE acceptance rate 2025*. https://unischolars.com/blog/lse-acceptance-rate/

Van Horne, S., Lin, S., Anson, M., & Jacobson, W., (2018). Engagement, satisfaction, and belonging of international undergraduates at U.S. research universities. *Journal of International Students, 8*(1), 351-374. https://doi.org/10.32674/jis.v8i1.169

Wang, P. Y. (2016). *A study of drop-out Chinese international students from a Canadian pre-university English language improvement program: Acculturation experiences and challenges* [Unpublished master's thesis]. University of Windsor. https://scholar.uwindsor.ca/etd/5873/

Wang, X., & Freed, R. (2021). A Bourdieusian analysis of sociocultural capital of Chinese international students in the United States. *Journal of International Students, 11*(1) 41-59. https://doi.org/10.32674/jis.v11i1.952

Weber, T., van Mol, C., & Wolbers, M. H. J. (2024). International students as sources of income? Moving beyond the neoliberal framing of internationalization. *Journal of Studies in International Education, 28*(4), 526-545. https://doi.org/10.1177/10283153231211999

Wekullo, C. S. (2019). International undergraduate student engagement: Implications for higher education administrators. *Journal of International Students,* 9(1), 320-337. http://dx.doi.org/10.32674/jis.v9i1.257

Xiao, M. (2024). Chinese international graduate students at Canadian universities: language barriers, cultural identities and perceived problems of engagement. *International Journal of Inclusive Education, 28*(5), 491-508. https://doi.org/10.1080/13603116.2021.1941318

Yakaboski, T., Perez-Velez, K., & Almutairi, Y. (2018). Breaking the silence: Saudi graduate student experiences on a U.S. campus. *Journal of Diversity in Higher Education, 11*(2), 221-238. https://doi.org/10.1037/dhe0000059

Yeo, H., Mendenhall, R., Harwood, S., & Huntt, M. (2019). Asian international student and Asian American student: Mistaken identity and racial microaggressions. *Journal of International Students, 9*(1), 39–65. https://doi.org/10.32674/jis.v9i1.278

Yu, Z. R. (2018). *A study of Chinese international students' classroom participation in an international M.Ed. program* [Master's thesis]. University of Windsor, ON. https://scholar.uwindsor.ca/cgi/viewcontent.cgi?article=1057&context=research-result-summaries

Zhong, W., & Cheng, M. (2021). Developing critical thinking: Experiences of Chinese international students in a post-1992 university in England. *Chinese Education and Society, 54*(3/4), 95-106. https://doi.org/10.1080/10611932.2021.1958294

Teacher Perceptions of Education for Sustainable Development Teaching: Before and During the COVID-19 Pandemic

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Abstract

This paper examines teachers' perceptions of Education for Sustainable Development regarding their practice before and during the COVID-19 pandemic. The study analyzes approaches to teaching Education for Sustainable Development and barriers faced. While teachers reported shifts in what was taught and how it was taught during the pandemic, most respondents remained committed to the core values of teaching Education for Sustainable Development. Barriers described by teachers before the pandemic included a lack of resources, time, and support, and barriers during the pandemic included a shifting and uncertain teaching environment burdened by video calls during lockdown periods and efforts to keep students safe during in-person teaching. Teacher insights included: spending regular time outdoors and framing the community as a classroom is a benefit for the health of students and their education; learning is inherently more powerful and productive when done socially; and teaching with technology has benefits but should not be the sole medium in which learning occurs. The aspects of school that were taken for granted and that were greatly diminished during the pandemic, social learning, guest speakers, field trips, and a predictable learning environment, were also those elements that were reported as being at the forefront of teachers' plans for their students when the pandemic ended. This research may benefit teachers, school leaders, policymakers interested in Education for Sustainable Development, and scholars planning future research.

Keywords: teacher perceptions, Education for Sustainable Development, COVID-19

On March 23rd, 2020, Manitoba K-12 schools entered an unprecedented period. The government announced that classes for all Kindergarten to Grade 12 students would be closed for three weeks. Seven days later, all in-person classes were suspended for the remainder of the school year and moved to remote learning (Manitoba Public Health, 2020). While students returned on September 8th, the pandemic continued to impact how schools operated for over two years, with additional shifts between lockdown and in-person schooling.

This period of the COVID-19 pandemic created complex challenges for teachers. At the outset of the initial lockdown in the spring, teachers were asked to shift to an unfamiliar teaching mode: trying to teach students through video calls and online learning platforms. For many, this was new terrain, and they had to adapt quickly, trying to keep students engaged and interested through a screen. A colleague described this moment for teachers as "trying to fix the plane while it's still in the air."

The government announced that students would return to in-person teaching in late August. Teachers quickly scrambled to alter their classrooms and common areas to newly announced school restrictions and protocols. Teachers now faced the prospect of educating students in an environment in which student interaction was limited, with tables removed and desks separated. Students had to be regularly screened for symptoms of COVID-19, protocols had to be enforced, shared materials had to be continually sanitized or removed entirely, and music programs that included wind instruments and choral singing were scrapped and replaced with alternative programming or cancelled. All aspects of schooling had to be rethought, and all measures had to be taken to avoid a COVID-19 outbreak. An additional layer of stress impacted teachers with children, partners, or elderly parents having medical conditions that made them more susceptible to hospitalization or death (Eblie-Trudel & Sokal, 2023). Teachers had to somehow create an environment where students could learn while at the same time keeping them protected from the threat of COVID-19.

In the fall of 2019, just months before the SARS-CoV-2 virus emerged (the virus that causes the respiratory disease named coronavirus disease 19 [COVID-19]), a series of global protests erupted demanding action in the face of an existential threat, the climate crisis. Protests occurred in 4,500 locations across 150 countries (Milman, 2019). Laville (2019) claims that the climate strike that occurred on September 20, 2019, just before the United Nations Climate Summit, with 4 million people participating worldwide, is likely the most significant climate strike in history. The momentum of the climate movement grew, but when the pandemic arrived, climate activists went into lockdown, continuing to organize and plan for future action. While the climate movement has been largely youth-driven (and was born out of the Fridays for Future coalition and many other climate actions that were taking place across the world), many teachers are working to raise awareness and action through various pedagogical approaches to support a transition to a sustainable future. Those teachers who work for sustainability are the subject of this investigation. We wanted to know the impact of the pandemic on teachers who are committed to promoting education for sustainability.

Our research investigated perceptions of teaching sustainability before and during the pandemic. Specifically, we wanted to know how these teachers described their teaching for sustainability before and during the pandemic. We were also curious about how they think they might teach after the pandemic. In the pages that follow, we will provide a review of the research literature that includes a global and local (Manitoba) history of Education for Sustainable

Development (ESD)[1], the aims, features, and critiques of ESD and the major studies on ESD. Following the Methodology section, we present our findings of ESD teaching experiences before and during the Covid-19 pandemic.

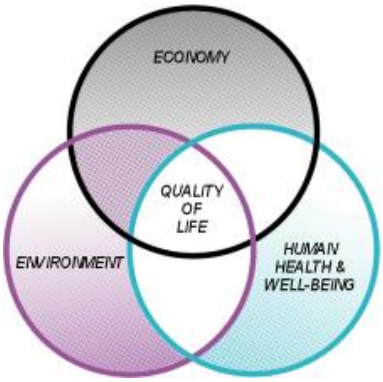
Literature Review

What is Education for Sustainable Development (ESD)?

UNESCO defines Education for Sustainable Development (ESD) as education that "employs action-oriented, innovative pedagogy to enable learners to develop knowledge and awareness and take action to transform society into a more sustainable one" (UNESCO, 2020, p. iii). The term 'sustainability' was introduced by Lester Brown, founder of the Worldwatch Institute, in the early 1980s. Since then, the notion of a sustainable society, one in which the human needs of the present are limited to maintain the survival of future generations, has been adopted into educational policy and research as a term of reference. Efforts to create a global framework for humankind to live with the natural world and within carrying capacity (living organisms that a region can support without ecological degradation) coalesced in the Brundtland Report (World Commission on Environment and Development, 1987) and launched into the wider global consciousness with the United Nations Earth Summit in Rio de Janeiro in 1992. ESD frameworks and practices have been updated and relaunched in the twenty-first century through the Millennium Development Goals (2000-2015) and the Decade of Action for Sustainable Development and Sustainable Development Goals (SDGs) (2016-2030) (United Nations, 2015). Visually, ESD is often presented as a Venn diagram (Figure 1) with three overlapping circles of environment, economy, and human health and well-being, with the center of the overlapping circles containing quality of life.

Figure 1

Education for Sustainable Development (Manitoba Education, n.d., p. 16)



At present, ESD is the preferred term by Manitoba Education in their published documents, resources and operational language. A significant push towards expanding sustainable development efforts in the province of Manitoba and from the Department of Education was made in the early 2000s. In 2005, the Manitoba provincial government under the national Canadian

[1] While there are many valid pedagogical approaches to address the climate crisis and issues of sustainability and equity, we have selected Education for Sustainable Development (ESD) for this study since it best represents the philosophy of the teachers interviewed. ESD is also the teaching model promoted in the Manitoba curriculum, following the United Nations Educational, Scientific and Cultural Organization's (UNESCO) model for sustainability education.

political party, the New Democratic Party (NDP), was ranked as the number one regional government in the world for combating climate change (Buckler & MacDiarmid, 2012). Manitoba's well-regarded approach was achieved through the appointment of consultants responsible for overseeing ESD in the province, including coordinated professional development, a robust website with resources and distributing resources including funding for ESD projects. Following the election of the Manitoba Progressive Conservative Party in 2016, this position was ended, as were foci around ESD from Manitoba Education. The Government of Manitoba continues to host a website dedicated to Education for Sustainable Development featuring resources (See http://www.edu.gov.mb.ca/k12/esd/ for more details).

Principles of ESD

The central aim of ESD is to utilize educational spaces inside and outside of the classroom to engender knowledge, attitudes, and actions that transform the behaviour of individuals into those that reduce their personal and collective negative impact on the planet. Teasing apart these aims, Zhang (2019) summarized and listed the ultimate goals of ESD as: (1) establish sustainable development values; (2) learn scientific knowledge of sustainable development; (3) cultivate sustainable learning ability; (4) practice a sustainable lifestyle; (5) pay attention to and participate in solving practical problems of sustainable development. ESD aims to design learning experiences that pull these elements together for learners to demonstrate responsible citizenship in which sustainability is a central facet for the sake of natural resource conservation at the local and global level for present and future generations. (Bourn, 2008; Liu & Qi, 2021)

While interpretations and resulting teacher practices of ESD vary across the globe (Kopnina & Meijers, 2012), there are a number of features common to instructional practices. Alampei, Malotidi, Psallidas, and Scoullos outline five elements that are often found in ESD pedagogy, namely:

> (1) interdisciplinary and holistic; (2) learner-centered and participatory; (3) value-driven, promoting critical thinking and exploring all stakeholders; (4) forward-looking, promoting medium and long-term planning; (5) locally relevant, encouraging multilateral collaboration among schools, local actors, and authorities, scientific communities, private sector, and NGOs, etc. and revealing global issues and connections as part of everyday life, whether in a small village or a large city. (2013, p. 110)

In addition, work by Kohl and Hopkins (2019) has outlined how ESD has been a successful framework for drawing in Indigenous perspectives to K-12 education, which has also been supported outside of the global north (Vaioleti & Morrison, 2019).

An effective strategy for the widespread adoption of ESD is a whole-school approach. Mogren, Gericke, and Scherp (2019) compared whole-school approaches to those of individual and uncoordinated efforts. They concluded that the benefits of a whole-school approach went beyond just knowledge, attitudes, and actions conducive to ESD; they also concluded that school improvement was measured higher than schools without standard ESD practices and had more significant potential for teacher support networks and collaborative professional practice. Metz et al. (2010) analyzed ESD in Manitoba and a whole-school approach at a school in Costa Rica, where ESD permeated all school subjects. The authors concluded that knowledge and behaviours were far more pro-environmental due to the whole-school approach, advocating for ESD to become the foundational subject in merging grade 10 social studies and grade 10 science in the Manitoba curriculum. Doing so would:

> make available the time needed to overcome scheduling difficulties and allow for a significant participatory component in the local community… [and] could lay the foundation for good science learning, civic participation, and awareness of, and informed action towards, the long-term health of local communities. Greater awareness of environmental issues should give such a proposal the necessary currency and advance a long overdue innovation in Manitoba's schools. (Metz et. al., 2010, p.166)

Indeed, holistic, interdisciplinary approaches to ESD are advocated widely in the literature (Borg et al., 2012; Burton, 2019a; Summers et al., 2005), which begins with teacher training programs (Agirreazkuenaga, 2019; Summers et al., 2005), and continues through in-school professional development learning (Summers et al., 2005).

Researchers have also made the case for the weaving of ESD with citizenship education (De Poza-Vilches et al., 2019; Westheimer, 2020). Westheimer (2020) points to significant overlap between the United Nations Sustainable Development Goals (SDGs), and notions of citizenship, whether global or democratic. SDG target 4.7 states that:

> All learners should acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity. (United Nations, 2015)

Effective ESD instruction may include learners exploring beyond individual interaction with the natural world to understand and act in ways that benefit people and the planet as a whole, what Westheimer (2020) calls "knowledge, capacities and dispositions associated with a robust, civically engaged life" (p. 296). Documents such as the Earth Charter (United Nations, 2000), which emerged from the 1992 Earth Summit, explicitly outline how democracy, human rights, and environmentalism are overlapping causes.

Barriers to ESD

A central tenet of ESD is its interdisciplinary nature (Summers et al., 2005). Research indicates variance in interpreting ESD and its application in classroom practice, with many studies suggesting that as youth move through the education system and subject disciplines become more siloed, ESD is increasingly limited to courses in the natural sciences or social studies. These findings are evident in Manitoba, where the siloing of subjects into separate curriculum areas prevents effective teaching of ESD (Babiuk & Falkenberg, 2011; Belton, 2013; Burton, 2019a; Eckton, 2016; Hart, 2002; Jacques, 2012; Kraljevic, 2011, Metz et al., 2010; Michalos et al., 2015). Traditional teaching practices limit ESD to direct instruction within a classroom and single subject, meaning that holistic, place-based and critical perspectives that integrate economic and social aspects of ESD are marginalized (Anyolo et al., 2018; Ferguson et al., 2021; Jetly & Singh, 2019).

Vare and Scott (2007) parsed apart the definition of ESD into ESD1 and ESD2. The authors found that ESD with a strictly environmental focus (what the authors called ESD1) was far more prevalent than ESD2, which included an intersection between the environment, society and politics, where teachers use this lens to encourage learning that is critical and explores or tests ideas around sustainable living. Other studies suggest that narrowing ESD to environmental focuses is due to the prominence of ESD within science curricula, often taught in a "fact-based" style, where the nuance of values present in social studies courses would both deepen and broaden

understanding (Borg et al., 2012; Summers et al., 2005). The ability to utilize science and social studies approaches simultaneously is stymied by subject disciplines siloed in the senior years (Manitoba Education, n.d.).

Overwhelmingly studies have indicated that a lack of knowledge, resources, and time are the primary barriers to the incorporation of ESD into classrooms (Agirreazkuenaga, 2019; Anyolo et al., 2018; Borg et al., 2012; Larsen, Skamp & Simoncini, 2017; Summers et al., 2005; Vucic, 2019). This is mirrored in the data from Manitoba, where several studies have found that a lack of knowledge, time, or an overly restrictive curriculum has prevented the effective inclusion of ESD into the classroom, particularly at the senior years level (Babiuk & Falkenberg, 2011; Belton, 2013; Burton, 2019a; Eckton, 2016; Hart, 2002; Jacques, 2012; Metz et al., 2010; Michalos et al., 2015).

ESD grew out of a desire to connect youth with an understanding of the natural world and the human role in it initially through "environmental education" (Stapp, 1969). Since that time and in part as a result of concerns around ESD being incompatible with changes required to address the environmental/climate crisis (Babiuk & Falkenberg, 2011; Homer-Dixon, 2020; Jickling, 1994; Stein, 2022), there has been a diversification in approaches to the knowledge, skills, and attributes associated with ESD. These include but are not limited to sustainable living (Stone, 2010), ecoliteracy (Goleman et al., 2012; Orr, 1992), outdoor education (Breunig et al., 2015), place-based education (Grunewald, 2003; Gruenewald & Smith, 2014), ecojustice education (Bowers, 2001, 2002; Martusewicz et al., 2011), and ecopedagogy (Kahn, 2008, 2010; Misiaszek, 2017, 2020). More recently, UNESCO has sought to draw elements of climate change education into ESD (Stevenson et al., 2017; Reid, 2019), as evident in the Berlin Declaration on Education for Sustainable Development (2022). While acknowledging this proliferation of theories and frameworks, this research utilized an ESD framework, as it remains the lens through which the curriculum is designed in Manitoba.

Teacher Perspectives on ESD

Teachers are often regarded as playing a crucial role in the presence of effective facilitation of ESD, and despite significant barriers, many persevere (Anyolo et al., 2018; Edwards et al., 2020; Larsen et al., 2017). In Manitoba, Jacques (2012) called these individuals *Green Don Quixotes*—ESD leaders who shouldered the burden of representing ESD in schools. Often, classroom teachers were determined to be highly knowledgeable and competent in ESD yet struggled with carrying the weight of such work, which often bled beyond the scheduled school hours of the day, leading to burnout.

Studies across the globe that have sought teachers' perspectives on ESD repeatedly found the belief that it was valuable content and experience for learners, yet there was a gulf between values and classroom practice (Belton, 2013; Boon, 2011; Gustafsson et al., 2015; Jacques, 2012; Larsen et al., 2017; Vucic, 2019). Conclusions are mixed on links between self-reported confidence and competency in teaching ESD, with Boon (2011) and Perkasa et al. (2020) finding that teachers overestimated their capacity to teach ESD effectively.

When barriers to ESD are addressed, such as additional time, professional development, whole-school approaches and supportive leadership, ESD can flourish (Borg et al., 2019; Burton, 2019b; Edwards et al., 2020; Green & Somerville, 2015; Larsen et al., 2017; Morgen et al., 2019; McNaughton, 2012; Perkasa et al., 2020; Sund & Wickman, 2008). A culture of support that models and encourages creative approaches to ESD, such as experiential, problem/project-based

learning and place-based education, has also been detailed to increase competency and enthusiasm from teachers and learners (Green & Somerville, 2015; McNaughton, 2012).

ESD and COVID-19

Research on ESD is emerging through the pandemic. Beasy and Gonzalez (2021) interviews with eight self-selected teachers engaged in ESD in Australia identified four common themes: changes to human behaviour are possible given a set of societal circumstances; they had hope that an extended lockdown would allow the planet to heal; perceptions of unequal access to healthcare became more evident across the globe; and that a slow-down in work, made possible by lockdown, had provided more time for reflection on their teaching practice.

The emphasis on using the global pandemic as a way to reflect, plan, and increase ESD capacity in education was also the focus of a paper by Kaukko et al. (2021). The authors mapped out three possible pathways for ESD in the 'post-corona world':

> "(1) to prepare children, young people, and adults to go back to the old ways (assuming the [pandemic] crises will pass); (2) to prepare them for new ways to live in, through, with and/or after crises; (3) to prepare them for an uncertain post-crisis future by travelling at the slowest possible pace commensurate with making enough change to satisfy enough people, while denying the excesses of the desires of the conservatives and the radicals." (p. 1567)

Education, the authors claimed, is partly responsible for the 'eco-crisis' but new 'practice architectures' that focus on the possibilities that a global pandemic has presented should act as a catalyst for "drastic, global changes in education" (p. 1568), in which ESD in its holistic, interdisciplinary approaches fits well.

The last two noted studies of the COVID-era focused on the impact of the pandemic and, specifically, lockdown on youth. Rios, Neilson, and Menezes (2021) reported vastly different experiences with nature during the pandemic, determined by socioeconomic backgrounds. For example, while many youths reported fear and anxiety around the pandemic, this was mediated by opportunities to spend time in nature. Time in nature was more prevalent in youth who resided in rural areas or were from wealthier families who had access to nature spaces. In an action research study, Servant-Miklos (2022) found that youth who engaged in an intervention of ESD experiences prior to the pandemic demonstrated increased resilience throughout the early period of lockdown. The author suggested that ESD,

> "can catalyze a change of perspective on the purpose of education [...] bring about greater concern for others in times of crisis, help to develop greater awareness of the systemic underpinnings of crises, and spur some students to take concrete action for change" (p. 18).

However, findings indicated that after an extended period following the end of the ESD intervention, youth began reverting to old and un-resilient patterns of thinking. The next section outlines the research methodology used in this study.

Methodology

Research Design

This study was conducted in Winnipeg, Manitoba, between May and June 2021, just over a year into the declaration of the COVID-19 pandemic. The months prior to the launch of our study represented a period in which teachers shifted back and forth between online and in-person contact.

Using qualitative content analysis, the study was designed to describe the perceptions of teachers who are committed to promoting education for the sustainability of their classroom practices and the barriers they faced in implementing those practices before and during the pandemic. We also designed the study to describe teachers' predictions of how the experience of teaching during the pandemic may impact the way they teach ESD in the future. Qualitative research strives to locate a phenomenological appreciation of a specific context, and describe the perceptions and lived experiences of the participants (Schreier, 2014). ESD teachers studied in this research shared their experiences in two semi-structured and in-depth video call interviews. The participants of this study included seven public education teachers: four in high school, one in middle school, and two in elementary school. Participants were interviewed individually via Zoom on two occasions in May and June of 2021 for a total of 14 interviews. The participants were identified through snowball sampling with the help of a prominent teacher for sustainability in Winnipeg and the education director of a local environmental education centre. Snowball sampling was conducted according to the following inclusion criteria: (a) teaching in a public K-12 school year 2020-2021; (b) teachers who integrate sustainability education into their practice; (c) teachers who were employed as teachers within the city of Winnipeg. The transcripts of teacher interviews are the data source for this paper. Seven teachers were recruited to participate. These teachers were identified as those who integrate sustainability education into their practice. Participants included in this study were those currently employed as teachers within the Winnipeg area. Of the seven teachers involved in the study, five of them were female, and the other two were male. Two of the participants were elementary teachers, two were middle teachers, and three were high school teachers. Participants received their interview transcripts to review and confirm their responses. Interviews were conducted that focused on the implementation of sustainability as a provincial K-12 cross-curriculum priority. We investigated perceptions and self-reported classroom practices of teachers relating to ESD through the following research questions: (a) How did teachers in K-12 school settings implement ESD in their classrooms before and during the pandemic? (b) What were the barriers that teachers perceived they faced in the implementation of ESD in the curriculum in each of these contexts? (c) How will the experience of teaching ESD during a pandemic change the emphasis on sustainability and global citizenship or how ESD is taught in a post-pandemic world? Semi-structured interviews were conducted using questions and prompts (see Appendix A).

Data Analysis

The qualitative content analysis based on the results from the individual cases was coded and categorized into themes. Qualitative content analysis seeks to aid in the validity and reliability of inferences through a system set of techniques for managing data (Schreier, 2014). In this study, qualitative content analysis was undertaken to apply Creswell and Guetterman's (2019) six generic strategies: (a) organize data for analysis (per interviewer question); (b) read through data; (c) begin coding; (d) generate categories and/or themes based on coding; (e) decide how themes will be presented; and (f) interpret the data. No data analysis software was used in the analysis of the transcripts. The interview audio was transcribed and reviewed for an overall understanding. Transcripts were then organized into units (individual teacher interview transcripts), and then each unit was coded. Codes were categorized into groups based on similarities. Transcripts were reviewed by participants for accuracy. Participants reviewed the codes for accuracy. Transcripts, along with the identified codes and categories, were examined and confirmed by both researchers of this study. Data categorization and interpretation were organized, confirmed, and reported by a careful review of the data collected.

Findings

In the following section, we discuss the findings of ESD teaching experiences before and during COVID-19. In the first subsection, we explore the commonalities of ESD teaching experiences before COVID-19 and common philosophies of teaching ESD, barriers, and catalysts. The second subsection explores the commonalities of ESD teaching experiences during COVID-19, examining the struggles, pandemic pedagogy, positive aspects of teaching ESD during the pandemic, and general takeaways of teaching ESD during COVID-19.

ESD Teaching Experiences Pre-COVID-19

Several commonalities emerged around how classroom teachers approached ESD instruction. Early and middle-year teachers (EY and MY) tended to start their lessons outdoors and provide space for learners' questions to emerge, which would then drive learning back in the classroom. This approach centred on nature and the community in ways that drew in ESD to the learners' lives. One teacher enthused about the potential of the local area to inspire and act as a catalyst for learning, stating "And just the potential is, in our community, there's so much out there within a two-hour round trip walk or two-hour round trip bike ride. Geez. There's so much you can see." Another teacher spoke to the power of the outdoors to make meaningful personal connections: "I just feel like when you are outside or when you're talking about environment or place, literally every person in the room can connect to that." Walking or hiking in the community as a starting point was found to be easier when built into the schedule, where learners and families came to see it as normalized. The EY and MY teachers who did this found that their students began to dress for the weather and understood the community as their classroom. Community experiences were supplemented with guest speakers and experts in relevant fields of knowledge (3 respondents).

Across all age groups, there was a recognition that inquiry and a project-based approach fit well with ESD (6 respondents). Inquiry allowed learners to explore questions they had about nature and the community deeply and tangibly. The impact of this was that students began to embody the role of stewardship. For example, one EY teacher spoke of learners becoming concerned with urban sprawl taking away natural habitats for native animals, while another shared how a ditch, renamed by the students as "lava land" became a favourite place for the class to walk to and spend time with; when construction that changed the topography of the ditch happened between visits, students were "livid." One school division had a purpose-built land-based learning centre, which featured prominently through several interviews as a space which was frequently visited to engage learners on the land, as was a larger outdoor education centre located in the south of the city, where teachers from Grades 1-12 and across school divisions would plan visits (4 respondents).

In the Senior Years (SY), outdoor or community visits were tied to a topic and used as a catalyst for action projects, or threaded throughout a unit to deepen context and provide space for hands-on learning. One theme that emerged from the interviews was that teachers at the SY were more intentional than EY or MY about how and why their classrooms explored ESD, purposely linking to specific curricula, learning outcomes, organizations with an environmental focus, or spaces that a unit could orient around. One example was a SY teacher who curated a "take action project" unit connected to the "Caring for Our Watersheds" competition, resulting in students having their community action project funded.

Philosophy of Teaching

Philosophically, every teacher valued ESD as a priority in their work. Two teachers stated that passion for the environment was the primary reason for them entering the field of education. It was clear that every teacher could speak authoritatively about why this work was important and the pedagogical rationale for how they facilitated ESD with learners. One teacher spoke to how ESD should be taught proactively as a way to extricate youth from being encultured into a wasteful society; similarly, another saw ESD as a valuable tool for expanding youth horizons on the way the world works, and the implications of society and themselves in particular in those systems; a third was impacted by the work of Richard Louv's "nature deficit disorder" as a motivator for getting learners outside every day. A teacher in the SY with high-level sciences on their course load spoke to the teaching of experiential and hands-on learning as "quality education [...] because if you aren't addressing the bigger problems or issues in our world, you know, I think you're missing an opportunity with kids." This teacher found that striking a balance between direct instruction and inquiry provided both curriculum content knowledge and space for deep engagement in topics of value to youth.

The commitment to ESD was maintained despite a number of barriers (which will be discussed later), owing to the benefits that teachers saw from students. Two teachers spoke to children being "transformed" as a result of being outside every day in terms of behaviour and engagement in their learning. The stewardship of spaces went home with learners, with one teacher referencing that their child took their family on walks to places that their class visited. To reach the point where teachers became recognized leaders in ESD, some mentioned that getting over the perspective of the curriculum as the starting point and sole arbiter of lesson plans provided them with the freedom to incorporate more ESD into their classrooms and be more responsive to student needs. One respondent reflected, "I started to shift my teaching practice away from the curriculum as much and more thinking of those important ideas and then how to work the curriculum towards fitting those ideas."

Aligning with Kohl and Hopkins' (2019) findings, almost every teacher mentioned both the opportunity to incorporate Indigenous worldviews and the importance of doing so in their ESD teaching. This was particularly evident when teachers described the value of students reconnecting to the land and the role of land in reconciliation. It was not clear in the interviews whether valuing the teaching of Indigenous perspectives emerged prior to, or during their time in education or teaching ESD. Further targeting of questions around how teachers draw in elements of Indigenous perspectives into Manitoba ESD education would be a worthwhile line of future research.

Barriers

Many barriers and catalysts to teaching ESD that emerged in the literature review were present in interviews. The time commitment to prepare for ESD instruction (5 respondents), worries that ESD took time away from teaching "basic" skills such as reading, writing, and mathematics (2 respondents), and fears of being questioned by parents on why traditional subjects and pedagogy was not the focus (2 respondents). Teachers also spoke more generally to concerns about the role–or lack thereof–of ESD in the school system. This included a dearth of curricula outcomes explicitly linked to ESD (which could place them in vulnerable positions with unfriendly administrators or families), challenges of discussing topics like climate change that risked exacerbating already noticeable increases in student mental health struggles, or a lack of resources that would allow their programs to be effective. On this last point, teachers raised scheduling, lack

of resources, and struggles in accessing Indigenous elders as barriers. One teacher spent a significant portion of her time researching and applying for grants to increase the opportunities for learners to experience ESD. Three teachers, all from the same metro Winnipeg school division, expressed frustration in their inability to secure buses for field experiences, with one teacher desiring a bus that would be available before 9:30 am with a return time of no later than 2:00 pm.

One teacher raised an issue regarding a perceived lack of attention that ESD received in post-secondary Bachelor of Education programs, using her experience with recent teacher candidates as an example. A 2012 Report by the Council for Ministers of Education found that in Faculties of Education there was, "modest but promising progress toward reorienting teacher education to address education for sustainable development" but that "ESD adoption is still primarily an individual faculty member commitment rather than a faculty-wide response" (pp. 3-4). In 2019 the Association for Canadian Deans of Education published a position paper acknowledging that education was "complicit" in the climate crisis and environmental emergency and amongst other pledges sought "to supporting each other within ACDE to transform our practices in ways that add to the equitable and sustainable future of the planet, through reporting and sharing challenges and good practices" (p. 3).

As discussed in the literature review, the double-bind of weak curricula connections (which vary from grade to grade depending on curriculum) and the siloed nature of curriculum and instruction of courses (particularly in the Senior Years), meant that teachers had to be highly creative in lesson plan design, well-supported by administrators, go to greater lengths to demonstrate the benefits of their programming, or be free from or resistant to scrutiny for them to infuse their work with ESD related experiences.

Two teachers echoed findings in the literature review of ESD being pushed to the margins in other classrooms or schools and taught as an "extra-curricular," an approach that was distinctly pushed back against by these interview participants. As the participating teachers were identified for their proficiency in ESD, pedagogical and content knowledge was only raised in one interview as a personal barrier to instruction.

Interestingly, only two teachers directly referenced assessment in their interviews. One spoke to the multiple ways they tracked and presented assessments to learners and families, which included documentation trails, co-created assessments between teacher and student, self-assessment and the use of rubric; this teacher, in particular, was informed by the work of Susan Drake (2014), who has published on effective classroom assessment through inquiry. Conversely, another teacher spoke to the challenges of aligning assessment to ESD practices, lamenting the siloing of curriculum on the provincial report card and the narrow opportunity to speak to the improved learning behaviours that present in outdoor education.

Catalysts

Support from adults outside of the classroom remained important. Positive administrative support (4 respondents) was offered as a catalyst, which speaks to the importance of prioritizing ESD at the divisional or provincial level with the intention that this permeates school plans and professional learning through school leaders. Only one of the interviewees was ambivalent about their current level of support from the administration, but all other teachers (6 respondents) seemed content in their school building and that they had found the space they desired to implement the ESD program that they wanted. For example, two teachers detailed how their ESD focus had been present to some extent throughout their teaching careers, but through professional growth and

support, it had flourished in their current teaching assignment. Three participating teachers had work experience in ESD-related fields and incorporated that learning into their current planning. Additional catalysts mentioned included having students for multiple or all their courses, which provided the capacity to integrate the curriculum into wider inquiry projects (2 respondents). Support is extended to families, too.

Two teachers expanded the places they were able to access for outdoor learning by cycling with their classes. This was made possible by parent chaperones.

ESD Teaching Experiences During COVID-19

The Struggles

Healthcare protocols initiated in schools during the pandemic had major implications for the teaching practices of participants, and for many, this meant teaching and designing learning that ran contrary to their experience of what good teaching for ESD looked and sounded like. Most significant of which was that teachers were unable to consistently plan for or execute exploration of the community as an initiation of, or as scaffolding for classroom content on ESD (6 respondents) and field trips (6 respondents). Social distancing in the classroom meant that there was a definite curtailing of social learning (5 respondents) through group discussions or hands-on learning (2 respondents), and a shift away from whole-class learning to individual work. Two teachers noticed that they were spending more time talking in classrooms than students (2 respondents), which for both philosophical and pedagogical reasons they did not believe led to engaging learning environments (4 respondents). One EY teacher stated:

> [There is] not a lot of spaces that we can go to, not a lot of things that we can engage with, you know, even if you think about games that you can play with kids and stuff like that. We're very limited to, you know, if it's involving kids touching the same object, we can't necessarily be doing that. So yeah, it's just a very soiled experience for most kids.

Another SY teacher listed the events that she and her learners benchmarked the year with that were cancelled because of the pandemic: whole-school assemblies, Earth Day, learning to maintain the Indigenous circle garden, and opportunities for student leadership with take-action projects. Interestingly, two teachers identified that they reverted to traditional teaching methods with an emphasis on direct instruction of mathematics and literacy without integrating ESD. [Name]

Pandemic Pedagogy

What emerged in most of the interviews was the hardship that both teachers and learners faced. Pedagogical practices undertook a significant shift for many teachers during the pandemic. Few teachers indicated that it was possible to use the weeks of low COVID-19 case counts to revert to their progressive style of teaching (referred to as an approach that encourages students to reflect on what they are learning, investigate their questions, and collaborate with their peers). Youth mental health was mentioned in a variety of descriptions, such as "lack of capacity," "overwhelmed with negativity," "survival mode," "malaise," "depression," and "anxiety," and was more pronounced with SY teachers than those at EY or MY. A SY teacher expressed the current state of his learners: "Kids are, their despair cups are so full that I don't, I'm really cognizant of overloading their cups." Teachers at the SY identified adaptations in content and pedagogy that mental health struggles required. These included increased use of articles as discussion starters (2 respondents), videos (2 respondents), independent inquiry projects (2 respondents), and experimenting with the flipped classroom (1 respondent); there was a desire by one teacher to

"simplify" their teaching for both student and their own mental health, with another teacher expressing that well-being became the priority in their class. Teachers were designing units with less explicit focus on ESD, with greater emphasis on the ability of student learning to pivot between in-person and virtual classes; the threat of shifting to remote learning one day to the next became a primary consideration. At times, ESD was avoided as a topic for learning due to it being a "gloomy" topic. Teachers' rhetoric emphasized "hope" and students as "part of the solution," pitching assignments to students that made these elements a focus or allowed escapism through utopian visions for the future.

Pandemic Positives

Nevertheless, some positive shifts did occur. As the science of how COVID-19 spread as an airborne disease became clearer, outdoor learning was recognized by schools as the safest space to learn. As a consequence, many teachers were empowered to get learners outdoors during the school day, building morning walks into the schedule. Yet one teacher spoke of the fear that community members would report them to the school for not having students' social distance while out in the community, confiding, "There's always people walking around the school, and it's, we're quite under the microscope." Some teachers spoke of having developed new skills or understandings that they would take with them into 'post-COVID teaching.' These included being more capable of reading students' body language and being more adept at using technology as an organizational tool or for outreach. A number of participating teachers admitted to pitching away from an ESD focus toward the Black Lives Matter movement. A French Immersion teacher also discovered that facilitating their language program while being outdoors broadened the opportunities for vocabulary development.

Takeaways from COVID-19

Perhaps unsurprisingly, the narrowing of possibilities for ESD teaching during the pandemic presented several epiphanies for interviewed teachers, but interestingly, these perspectives were not explicitly located in their work. For example, the role of the human/nature divide. One teacher relayed how he linked the pandemic response to ecological crisis: "What I tried to have them acknowledge is that a lot of the strategies we've learned from COVID, both global cooperation and communication will very likely need to be applied to address climate change" and that "individual action is not enough." Another teacher echoed this, saying they believed now more than ever that "worldviews do shape actions" and that education plays a critical role in this work.

There was also greater awareness of the central role that schools played in supporting social, emotional and academic well-being in youth, with teachers highlighting the need for students to learn in person (2 respondents) and that the social aspect of school for youth was probably underestimated before the pandemic. There were mixed responses regarding the role of technology in the classroom, with one teacher more open to its utility for organizing students' learning and another seeing the continued potential of drawing guest speakers into the classroom. Another teacher committed to using less technology, stating, "Here's the thing: anything that's good about virtual meetings, you can probably do in a classroom and do better."

Pedagogically, teachers expressed their desire to double down on ESD teaching once it was safe and logistically possible to do so and that outdoor and community-based learning should be a part of the school day (4 respondents). One teacher enthused about how they wanted to orient future ESD around reconciliation and learning on the land, claiming:

> I'm really going to come [at], and everything around sustainability global citizenship from the perspective of connecting the importance of connecting with the land, connecting with other people, connecting with his importance of slowing things down and of connecting two things through story… at the end of the day you can't get the sustainable development without human connection between people.

Discussion

Without the passionate and intentional work of ESD champions, youth knowledge, attitudes and actions on ESD would be diminished. Without this work, efforts at promoting the idea that injustice lies at the centre of the climate crisis and the wider work of climate change mitigation and adaptation would all look bleaker in whichever part of the globe one inhabits. While we, as researchers, are cautious not to draw too significant of conclusions based on the small sample of participants, the interviews with seven educators in Manitoba resoundingly supported the wider research around catalysts and barriers to ESD education reported in the literature review. Though there were repeated stories of significant shifts in what was taught and how it was taught during the pandemic, the commitment to "what matters" (Sund & Wickman, 2008) may have shifted for some of our participants, but the commitment to children remained a primary concern of these educators. This was despite a reduction in resources, in-person contact time, and support, along with the ever-changing landscape for teaching through the 2020 to 2021 school years.

As the literature detailed in the first half of this paper stated, teaching ESD might be vital in times of social and ecological crises, but the structure of public schooling and networks of support are not conducive to nurturing it. During the COVID-19 pandemic, of the five elements of ESD that Alampei et al., (2013) detail, the first three (interdisciplinary and holistic; learner-centred and participatory, as well as value-driven; promoting critical thinking and exploring all stakeholders) were able to continue and even deepen during COVID-19 as opposed to before, while the final two (forward-looking, promoting medium and long-term planning, and locally relevant, encouraging multilateral collaboration among schools, local actors, and authorities, scientific communities, private sector, and NGOs, etc., as well as revealing global issues and connections as part of everyday life, whether in a small village, or a large city) were curtailed due to the limitations of knowing the future of education and communities and being isolated from engaging deeply in them. Educators simply were not able to design deep and immersive experiences to the extent they had pre-pandemic, or wished to because of the instability of not knowing whether they would be in schools or remote from one day to the next.

What was interesting to note was that the COVID-19 pandemic itself was not used as a topic for inquiry for many of these educators, despite the abundance of resources and entry points for inquiry. Doing so would have broadened the scope of teaching to meet Vare and Scott's (2007) aim of meeting ESD2, where the content was drawn from the intersection of environment, society and politics, as would Westheimer's (2020) consideration of citizenship and ESD overlap in the Sustainable Development Goals. Many of these teachers were attuned to the needs of their learners and instead decided to begin with what students needed at that particular moment: remaining committed broadly to ESD, but looking at other content areas as a distraction from the horrors playing out in their communities. This finding supports the conclusions of Servant-Miklos (2022) who claimed that teaching ESD during the pandemic can change the objectives of education. In this way, as participating teachers in this study under "normal teaching conditions" were dedicated to teaching ESD in order to equip their learners to engage meaningfully in the world as it is and might be, during the pandemic, this practice was adjusted in response to the mental and physical

health needs of their learners in the moment. All were committed to re-engaging deeply and meaningfully in their ESD work when it was safe to do so.

Digging through the responses from these teacher interviews, epiphanies emerged: spending regular time outdoors and framing the community as a classroom is good for the health of students and their education; learning in K-12 is inherently more powerful and productive when done socially; technology is a wonderful tool, but should not be the sole medium in which learning occurs. When what teachers took for granted before the pandemic—social or communal learning, sourcing guest speakers, field experiences, a predictable learning environment from one day to the next—crystalized how respondents would engage in their work once restrictions were lifted.

Conclusion

What remains to be seen is how the pandemic impacts the possibilities open to teachers, the focus of national and regional governments to commit to an ESD focus in K-12 and the capacity and interest in youth to ESD learning itself. For example, will community and online resources for ESD expand or shrink? Will the economic and social impacts of COVID-19 lead to greater emphasis on "back to basics" education? Will youth and families determine issues or content as of more importance? The Province of Manitoba's abandonment of Bill 64 in the summer of 2021, which would have removed decision-making from local school authorities in the metro Winnipeg area, and focused on a "back to basics" approach to K-12 education, as well as the failure of anti-vaccination/conspiracy theorist school board trustee candidates in fall 2022 suggest a platform for permanently embedding ESD in Manitoba curriculum is possible, despite much regression from its primacy in the late 2000s and 2010s. Yet this is also contrasted with a surge in the "Parental Rights Movement" in the lead-up to the 2023 Manitoba Provincial Election, which in the United States and parts of Canada has targeted teaching ESD issues such as 2SLGBTTQ+ rights, anti-racism, and climate change as unfit content for public schools. Time will tell whether Beasley and Gonzalez's (2021) hopes that the COVID-19 pandemic will have acted as a launchpad to improved conditions for ESD teaching or whether teaching in isolation has set back efforts to shift from the lone *Green Don Quixote* (Jacques, 2012), to the whole-school approach to ESD advocated by Metz et al. (2010).

Many educators will connect the dots between how the COVID-19 pandemic emerged and humans' unhealthy relationship with nature. What is almost certain is that a new cohort of educators that have grown of age during a time of environmental degradation and climate emergency are joining the workforce and doubling down on their determination to put ESD front and centre in their classrooms. The extent to which recognition of "climate justice" as a wider conception of how climate, environment, colonialism, and capitalism intersect (Klein & Stefoff, 2021) and the critical role of Indigenous peoples at the front line of this struggle (Thomas-Muller, 2022) as the lens in which K-12 educators are framing learning experiences for their students is an important yet unexplored area of research.

References

Agirreazkuenaga, L. (2019). Embedding sustainable development goals in education: Teachers' perspective about education for sustainability in the Basque Autonomous Community. *Sustainability, 11*(5), 1496. https://doi.org/10.3390/su11051496

Anyolo, E. O., Kärkkäinen, S., & Keinonen, T. (2018). Implementing education for sustainable development in Namibia: School teachers' perceptions and teaching practices. *Journal of Teacher Education for Sustainability, 20*(1), 64-81. https://doi.org/10.2478/jtes-2018-0004

Alampei, I., Malotidi, V., Psallidas, V., & Scoullos, M. (2013). Key concepts in Education for Sustainable Development (ESD). In *Education for sustainable development in biosphere reserves and other designated areas: A resource book for educators in South-eastern Europe and the Mediterranean*. UNESCO.

A Manitoba Coronavirus Timeline: How the province has reacted since the announcement of the first 3 COVID-19 cases on March 12. (2020-09-25). *CBC News*. https://www.cbc.ca/news/canada/manitoba/timeline-covid-19-manitoba-1.5515193

Association of Canadian Deans of Education (ACDE). (2010). Statement of Commitment on the Climate Emergency. ACDE: https://www.cmec.ca/Publications/Lists/Publications/Attachments/222/ESD-collaboration-action.pdf

Babiuk, G., & Falkenberg, T. (2011). *Sustainable development and living through changing teacher education and teaching in Manitoba*. University of Manitoba.

Beasy, K., & Gonzalez, L. R. (2021). Exploring changes in perceptions and practices of sustainability in ESD communities in Australia during the COVID-19 Pandemic. *Journal of Education for Sustainable Development, 15*(1), 5-24. https://doi.org/10.1177/09734082211012081

Belton, C. (2013). *Successes drivers and barriers of education for sustainable development in Canada, England and Australia*. [Unpublished master's thesis]. University of Manitoba.

Boon, H. J. (2011). Beliefs and education for sustainability in rural and regional Australia. *Education in Rural Australia, 21*(2), 37-54.

Borg, C., Gericke, N., Höglund, H. O., & Bergman, E. (2012). The barriers encountered by teachers implementing education for sustainable development: Discipline bound differences and teaching traditions. *Research in Science & Technological Education, 30*(2), 185-207. https://doi.org/10.1080/02635143.2012.699891

Bowers, C. A. (2001). *Educating for eco-justice and community*. University of Georgia Press.

Bowers, C. A. (2002). Toward an eco-justice pedagogy. *Environmental Education Research, 8*(1), 21-34. https://doi.org/10.1080/13504620120109628

Breunig, Murtell, J., & Russell, C. (2015). Students' experiences with/in integrated Environmental Studies Programs in Ontario. *Journal of Adventure Education and Outdoor Learning, 15*(4), 267-283. https://doi.org/10.1080/14729679.2014.955354

Buckler, C., & MacDiarmid, A. (2012). Education for Sustainable Development in Manitoba: A Provincial-Wide Approach. In R. McKeown & V. Nolet (Eds.), *Schooling for sustainable*

development in Canada and the United States (pp. 95-108). Springer. https://doi.org/10.1007/978-94-007-4273-4_7

Burton, W. (December, 2019a). Measuring the prevalence of ecopedagogy in the Manitoba senior years curriculum. *Canadian Journal for New Scholars in Education.*

Burton, W. (2019b). Ecological literacy and project-based learning. In M. Henderson (Ed.), *Catch a fire: Fuelling inquiry and passion through project-based learning* (pp.149-170). Portage and Main Press.

Council of Ministers of Education, Canada (CMEC). (2012). *Educating for Sustainable Development in Canadian Faculties of Education*. CMEC: http://www.cmec.ca/publications/lists/publications/attachments/279/esd_dean_reporten.pdf

Creswell, J., & Guetterman, T. (2019). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (6th ed.). Pearson.

De Poza-Vilches, M. F., Gutiérrez-Pérez, J., & López-Alcarria, A. (2019). Participation and sustainable development. In W. Leal Filho (Ed.), *Encyclopedia of sustainability in higher education* (pp. 1239-1250). Springer. https://doi.org/10.1007/978-3-030-11352-0

Eblie-Trudel, L., & Sokal, L. (2023). Dynamic perspectives on education during the COVID-19 pandemic and implications for teacher well-being. *International journal of educational research open*, *4*, 100241. https://doi.org/10.1016/j.ijedro.2023.100241

Eckton, H. M. (2016). *Education for sustainable living: Exploring the landscape of one urban high school's sustainability practices and values* [Doctoral dissertation, University of Manitoba]. https://central.bac-lac.gc.ca/.item?id=TC-MWU-31070&op=pdf&app=Library

Edwards, D. B., Sustarsic, M., Chiba, M., McCormick, M., Goo, M., & Perriton, S. (2020). Achieving and monitoring education for sustainable development and global citizenship: A systematic review of the literature. *Sustainability*, *12*(4), 1-57.

Goleman, D., Bennett, L., & Barlow, Z. (2012). *Ecoliterate: How educators are cultivatingEmotional, social, and ecological intelligence*. Jossey-Bass.

Green, M., & Somerville, M. (2015). Sustainability education: Researching practice in primary schools. *Environmental Education Research*, *21*(6), 832-845. https://doi.org/10.1080/13504622.2014.923382

Gruenewald, D. A. (2003). The best of both worlds: A critical pedagogy of place. *Educational researcher*, *32*(4), 3-12. https://doi.org/10.3102/0013189X032004003

Gruenewald, D. A., & Smith, G. A. (Eds.). (2014). *Place-based education in the global age: Local diversity*. Routledge.

Gustafsson, P., S. Engström, & A. Svenson. (2015). Teachers' view of sustainable development in Swedish upper secondary school. *Procedia - Social and Behavioral Sciences*, 167, 7-14. http://doi:10.1016/j.sbspro.2014.12.635

Homer-Dixon, T. (2020). *Commanding hope: The power we have to renew a world in peril.* Vintage Canada.

Hart, P. (2002). Environment in the science curriculum: The politics of change in the Pan-Canadian science curriculum development process. *International Journal of Science Education, 24*(11), 1239-1254. https://doi.org/10.1080/09500690210137728

Henderson, M. (2016). Bridging the ecological knowledge and knowledge-action gaps: A utopian vision for education in Manitoba [Unpublished master's thesis]. University of Manitoba.

Hickman, L. (2012). James Lovelock on shale gas and the problem with greens. *The Guardian.* https://www.theguardian.com/environment/blog/2012/jun/15/james-lovelock-fracking-greens-climate

Jacques, C. (2012). The green Don Quixotes: Values development of education for sustainable development teachers [Unpublished master's thesis]. University of Manitoba.

Jetly, M., & Singh, N. (2019). Analytical study based on perspectives of teacher educators in India with respect to education for sustainable development. *Journal of Teacher Education for Sustainability*, *21*(2), 38-55. https://doi.org/10.2478/jtes-2019-0016

Jickling, B. (1994). Why I don't want my children to be educated for sustainable development. *Trumpeter, 11*(3), 114-16. https://doi.org/10.1080/00958964.1992.9942801

Kahn, R. V. (2008). Green theory and praxis. *Green Theory & Praxis: The Journal of Ecopedagogy, 4*(1), i-iv.

Kahn, R. V. (2010). *Critical pedagogy, ecoliteracy & planetary crisis: The ecopedagogy movement.* Peter Lang.

Kaukko, M., Kemmis, S., Heikkinen, H. L., Kiilakoski, T., & Haswell, N. (2021). Learning to survive amidst nested crises: Can the coronavirus pandemic help us change educational practices to prepare for the impending eco-crisis? *Environmental Education Research, 27*(11), 1559-1573. https://doi.org/10.1080/13504622.2021.1962809

Klein, N., & Steffof, R. (2021). *How to change everything: The young human's guide to protecting the planet and each other*. Atheneum Books for Young Readers.

Kohl, K., & Hopkins, C. A. (2019). ESD FOR ALL: Learnings from the Indigenous ESD global research. *Journal of Teacher Education for Sustainability*, *21*(2), 105-120. https://doi.org/10.2478/jtes-2019-0020

Kopnina, H., & Meijers, F. (2014). Education for sustainable development (ESD): Exploring theoretical and practical challenges. *International Journal of Sustainability in Higher Education*, *15*(2), 188-207. https://doi.org/10.1108/IJSHE-07-2012-0059

Kraljevic, G. M. (2011). Does the Manitoba science curriculum help teach teens to be moreenvironmentally-minded [Unpublished master's thesis]. University of Manitoba.

Lasen, Skamp, K., & Simoncini, K. (2017). Teacher perceptions and self-reported practices of education for sustainability in the early years of primary school: An Australian case study. *International Journal of Early Childhood, 49*(3), 391-410. https://doi.org/10.1007/s13158-017-0200-x

Laville, S., & Watts, J. (2019). Across the globe, millions join biggest climate protest ever. *The Guardian.* https://www.theguardian.com/environment/2019/sep/21/across-the-globe-millions-join-biggest-climate-protest-ever

Manitoba Education and Early Childhood Learning. (n.d.). *Curriculum: Kindergarten to Grade 12*. Government of Manitoba. https://www.edu.gov.mb.ca/k12/cur/

Manitoba Public Health. (2020). *Manitoba Suspends Classroom Learning Indefinitely Amid COVID-19 Pandemic: Remote and Online Learning, Assessment to Continue Through Innovation and Work Of Teachers: Goertzen.* https://news.gov.mb.ca/news/index.html?item=47341&posted=2020-03-31#:~:text=The%20suspension%20of%20in%2Dschool,in%20mind%2C%20the%20premier%20noted.

Martusewicz, R., J. Edmondson, & J. Lupinacci. (2011). *EcoJustice education. Toward diverse, democratic and sustainable communitie*s. Routledge.

McNaughton, M. J. (2012). Implementing education for sustainable development in schools: Learning from teachers' reflections. *Environmental Education Research, 18*(6), 765-782. https://doi.org/10.1080/13504622.2012.665850

Metz, D., McMillan, B., Maxwell, M., & Tetrault, A. (2010). Securing the place of educating for sustainable development within existing curriculum frameworks: A reflective analysis. *Canadian Journal of Environmental Education, 15*, 150-169.

Michalos, A. C., Creech, H., Mcdonald, C., & Kahlke, P. M. H. (2011). Knowledge, attitudes and behaviors. Concerning education for sustainable development: Two exploratory studies. *Social Indicators Research, 100*(3), 391-413. https://doi.org/10.1007/s11205-010-9620-9

Minkler, M., Blackwell, A. G., Thompson, M., & Tamir, H. (2003). Community-based participatory research: Implications for public health funding. *American Journal of Public Health, 93*(8), 1210-1213. https://doi:10.2105/ajph.93.8.1210

Misiaszek, G. W. (2017). *Educating the global environmental citizen: Understanding ecopedagogy in local and global contexts*. Routledge.

Misiaszek, G. W. (2020). *Ecopedagogy: Critical environmental teaching for planetary justice and global sustainable development*. Bloomsbury Publishing.

Milman, O. (2019). US to stage its largest ever climate strike: 'Somebody must sound the alarm' *The Guardian*. https://www.theguardian.com/world/2019/sep/20/climate-strikes-us-students-greta-thunberg

Mogren, A., Gericke, N., & Scherp, H. Å. (2019). Whole school approaches to education for sustainable development: A model that links to school improvement. *Environmental education research, 25*(4), 508-531. https://doi.org/10.1080/13504622.2018.1455074

Onyolo, E. O., Kärkkäinen, S., Keinonen, T. (2018). Implementing education for sustainable development in Namibia: School teachers' perceptions and teaching practices. *Journal of Teacher Education for Sustainability, 20*(1), 64-81. https://doi.org/10.2478/jtes-2018-0004

Orr, D. W. (1992). *Ecological literacy: Education and the transition to a postmodern world*. Suny Press.

Perkasa, M., Irwansyah, M., Annafi, N., Khairunnisa & Jaharudin. (2020). Teacher's perception on the implementation of education for sustainable development-based learning in senior high school. *Journal of Physics: Conference Series*. *1521*(4). https://doi.org/10.1088/1742-6596/1521/4/042110

Reid, A. (2019). Key questions about climate change education and research: 'essences' and 'fragrances'. *Environmental Education Research*, *25*(6), 972-976. https://doi.org/10.1080/13504622.2019.1662078

Rios, C., A. L. Neilson, & I. Menezes. (2021). COVID-19 and the desire of children to return to nature: Emotions in the face of environmental and intergenerational injustices. *The Journal of Environmental Education*, *52*(5), 335-346. http://doi:10.1080/00958964.2021.1981207

Schreier, M. (2014). *Qualitative content analysis*. SAGE Publications Ltd. https://doi.org/10.4135/9781446282243

Servant-Miklos, V. (2022). Environmental education and socio-ecological resilience in the COVID-19 pandemic: lessons from educational action research. *Environmental Education Research, (28*)1, 18-39. http://doi:10.1080/13504622.2021.2022101

Stapp, W. B. (1969). The concept of environmental education. *The Journal of Environmental Education*, *1*(1), 30-35. https://doi.org/10.1080/00139254.1969.10801479

Servant-Miklos, V. (2022). Environmental education and socio-ecological resilience in the COVID-19 pandemic: lessons from educational action research. *Environmental Education Research*, *28*(1), 18-39. https://doi.org/10.1080/13504622.2021.2022101

Stevenson, R. B., Nicholls, J., & Whitehouse, H. (2017). What is climate change education?. *Curriculum Perspectives*, *37*(1), 67-71. https://doi.org/10.1007/s41297-017-0015-9

Stone, M. (2010). What is education for sustainable living? Center for Ecoliteracy. https://www.ecoliteracy.org/article/what-education-sustainable-living

Summers, M., Childs, A., & Corney, G. (2005). Education for sustainable development in initial teacher training: Issues for interdisciplinary collaboration. *Environmental Education Research*, *11*(5), 623-647. https://doi.org/10.1080/13504620500169841

Sund, P., & Wickman, P. O. (2008). Teachers' objects of responsibility: something to care about in education for sustainable development?. *Environmental Education Research*, *14*(2), 145-163. https://doi.org/10.1080/13504620801951681

Thomas-Muller, C. (2022). *Life in the city of dirty water: A memoir of healing.* Penguin.

Tilbury, D. (1995). Environmental education for sustainability: Defining the new focus of environmental education in the 1990s. *Environmental education research*, *1*(2), 195-212. https://doi.org/10.1080/1350462950010206

UNESCO. (2020). *Education for sustainable development: A roadmap*. https://unesdoc.unesco.org/ark:/48223/pf0000374802

UNESCO. (2022). *Berlin declaration on education for sustainable development; Learn for our planet: Act for sustainability.* https://unesdoc.unesco.org/ark:/48223/pf0000381228

United Nations. (2000). The Earth Charter. http://earthcharter.org/discover/the-earth-charter/

United Nations. (2015). Transforming our world: The 2030 agenda for sustainable development. *New York: United Nations, Department of Economic and Social Affairs*.

United Nations. (n.d.). SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. https://www.unodc.org/unodc/en/sustainable-development-goals/sdg4_-education.html

Vaioleti, T. M., & Morrison, S. L. (2019). The value of Indigenous knowledge to education for sustainable development and climate change education in the Pacific. In E. McKinley & L. Smith. (Eds.), *Handbook of Indigenous Education* (pp. 651-670). Springer. https://doi.org/10.1007/978-981-10-3899-0_8

Vare, P., & Scott, W. (2007). Learning for a change: Exploring the relationship between education and sustainable development. *Journal of Education for Sustainable Development, 1*(2), 191-198. https://doi.org/10.1177/097340820700100209

Vukic, T. (2019). Sustainable development from a high school teacher's perspective. *Philosophy, Sociology, Psychology and History*, *18*(3), 131-148. http://doi:10.22190/FUPSPH1903131V

Westheimer, J. (2020). Can education transform our world? global citizenship education and the UN's 2030 agenda for sustainable development. In A. Wulff (Ed.), *Grading Goal Four* (pp. 280-296). Brill. https://doi.org/10.1163/9789004430365_013

World Commission on Environment and Development (1987). *Our Common Future*. Oxford University Press.

Zhang, X. Y. (2019). Construction of teachers' educational ability for sustainable development. *Journal of Beijing Institute of Education, 33*(3), 41-47. https://doi.org/10.5430/ijhe.v10n2p284

APPENDIX A

Semi-structured Interview Questions

1. What was your approach to teaching Education for Sustainable Development (ESD) before the pandemic? What kinds of things did you do? What are some examples of your approach?
2. Was integration of ESD across the curriculum part of your approach? If so, how did you do this? What are some specific examples?
3. Thinking back on your experiences, what were some of the major barriers you faced trying to teach ESD before the pandemic? What were some of the minor ones?
4. What kind of stresses do you face during the pandemic that are specific to your teaching of ESD?
5. How has the pandemic changed your approach to teaching ESD? What kinds of things do you differently? What are some examples?
6. What was your approach to teaching ESD during the pandemic? What kinds of things did you do? What are some examples of your approach during the pandemic?
7. At any time since the pandemic began, did you connect the students' experience with the pandemic to your teaching of ESD? If so, how did you do it? Examples?
8. Thinking back on your experiences, what were some of the major barriers you faced trying to teach ESD during the pandemic? What were some of the minor ones?
9. What has the pandemic taught you as a teacher of ESD? How will the experience of teaching ESD during a pandemic change your emphasis or the way in which ESD is taught in a post-pandemic world? Is there anything that you will do differently? What are some examples?

A review of Ranjan Dattaôs (Ed.), *Decolonization in practice: Reflective learning from cross-cultural perspectives*

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Ranjan Dattaôs (2023) *Decolonization in practice: Reflective learning from cross-cultural perspectives* explores its titular theme across 15 chapters of this new edited book. The bookôs appeal is in bringing together perspectives from Indigenous and non-Indigenous settler Canadians from diverse racial and cultural backgrounds regarding how to move decolonization from discourse to practice. As two racialized colour settlers to Canada ourselves (one of us is from Africa and the other from the Caribbean), we were particularly drawn to the book. The book is divided into five parts, with a short introduction to each of the parts. Author biographies are placed at the front, and a half-page section titled *What is Next (Moving Forward)* is at the end of the book. The book aims to move decolonization from discourse and theoretical inquiry to the realm of everyday practice. A supporting premise is set early in the bookôs introduction, stating, ñ[m]any academic researchers introduced decolonization in their work; however, they have not explained what it means to think of decolonization as a source of reflective learning from and within our everyday practiceò (p. 1). The editor positions the book to address this gap.

The first part of the book directly unpacks the overarching theme of decolonization in practice, exploring Indigenous community reflections from Anishanaabe, Cree, Métis, and Mohawk scholars. Herein, the authors expound on epistemology in assessing ñhow we know what we know and why and how to learn to do things differently in our everyday practiceò (p. 9). Across the six chapters, authors explore this focus through a number of pedagogical framings, such as Indigenous dance as transformative decolonial pedagogy, Indigenous storytelling to transform university pedagogy, land-based education as transformative pedagogy, anti-racist community building as critical pedagogy, and transforming colonized mindsets to decolonized dreams. The main insight from this part of the book is how decolonization could occur from a pedagogical perspective, in the sense that when learners have encounters with teachers, knowledge keepers, and Indigenous elders, they have the opportunity to learn, unlearn, and relearn the history of Canada and understand a way forward. This section of the book advances the argument that we, as settlers, have a responsibility to the Indigenous peoples and the Indigenous land on which we all live.

In the second part of the book, racialized immigrant women and children share community reflections on decolonization in practice. In the four chapters, these settler authors of colour contribute their voices to the theme of decolonization in practice, emphasizing individualsô responsibility to seek knowledge about the places and spaces they occupy, and describing this responsibility as sign of respect to both the lands and the peoples who have inhabited these lands from time immemorial. Each contributing authorôs reflections convey deep respect and reverence for Indigenous lands and customs. Particularly for us, Jebunnessa Chapolaôs contribution stands out. This author shares her practices as a newcomer, racialized, settler woman from a privileged mainstream Muslim background in Bangladesh, learning the Indigenous significances of land acknowledgements, proposing how this learning has helped her create a strong sense of belonging and community with Indigenous peoples and the land. This authorôs work in a community garden, in bringing gardeners and community guests together, and participating in activities including childrenôs anti-racist art workshops, talks on the environment, talks by Indigenous Elders,

education movie nights, and presentations on the benefit of gardening are inspiring examples of committed intent and follow-through by a racialized Canadian settler towards decolonization and reconciliation. This section of the book situates these actions by colour settlers as a sign of respect to the land and of embracing and showing reverence for cultures and traditions of Indigenous peoples. The authors demonstrate their understanding of what it means to live together with Indigenous communities in a relationship borne out of and executed in mutual respect and understanding.

The final three sections of the book are short, containing two chapters each in the third and fourth parts and one in the final part of the book. The third and fourth parts continue to carry the theme from the second part of the book, that of community reflections on decolonization in practice, with the author centering ñcolour settler perspectivesò in the third part and ñBlack and Asianò perspectives in the fourth. A key takeaway from the third part of the book is in the authorsô demonstration of how decolonization is meant to occur not only in schools but in every aspect of life, including our daily activities. In this sense, the authors show, through their own lived examples, how decolonization is a collective responsibility and what it means to act on this responsibility. Decolonial stories of learning, unlearning, and relearning are shared. In honest and vulnerable detail, the authors share their actions in acknowledging and honouring Indigenous ceremonies, traditions or protocols and implementing them in everyday practices. In part four, the first of two chapters attempts to connect decolonization through climate research from the perspectives of Sub-Saharan African immigrant communities in Western Canada, and the second offers the authorôs anti-racism activism in building a decolonial community in a Vancouver Asian district. We found this second chapter particularly effective and noteworthy. The author begins by acknowledging her Asian communityôs discrimination against Black people and sets this prejudice against the backdrop of xenophobia being experienced by Asian residents in Vancouverôs Chinatown. The author is part of a community resistance effort towards gentrification and racism in this district and relates how Asian residents came to confront their own ignorance and prejudice and reorient their claims of óownershipô to the lands on which their community resides. Through community collaboration, the Asian residents were able to build relationships of solidarity, respect, and reverence with Indigenous residents. The last part of the book is comprised of only one chapter, and here, the author discusses the responsibility of building decolonial communities through anti-racism education and action.

While we found the book informative and insightful, we think that a reorganization of the five sections would help these sections be more evenly weighted. For example, we propose that the organization of the text might be simplified by dedicating the first part of the book to Indigenous community reflections on decolonization. By recategorizing the terms ñcolour settlerò and ñBlack and Asianò as ñracializedò, the second part of the book would be focused on racialized immigrant community reflections on decolonization in practice and research. This would leave a last and third section to involve work of Black, Asian, and European contributors exploring research and action-based decolonization.

Another critique of this book regards the lack of robust discussion and follow-through in two of the chapters. For instance, while Chapter 10 is particularly appealing to usð the authors are two teenaged children of colour settler Canadians and are actively involved in community practices of cross-cultural decolonizationð a few missed opportunities to more fully flesh out key terms and positions put forward weakened the chapter. For example, the authorsô mobilization of the term land-based storytelling is particularly noteworthy, but the authors do not define or explain the term

to readers. In other instances, they fail to always flesh out Indigenous teachings around the cyclical and interconnected relationships between humans and our ecosystems. One such example occurs when, in advocating for more physical connections with the land and with plants and animals, they state that ñ[h]arming one insect would harm many othersò (p. 183) without explaining how this is so and/or making an explicit connection to the cyclical and interconnected nature of humansô relationship or responsibilities with and to Mother Earth.

Lastly, the editorôs own co-authored chapter on the sub-Saharan African immigrant communitiesô perspectives around climate risks missed important opportunities to connect more explicitly with the bookôs overarching theme, decolonization in practice. In this chapter, the authors use the term *decolonial* often, referencing ñdecolonial data analysisò (p. 228, 234), ñdecolonial findingsò (p. 228), and ñdecolonial learning journeyò (p. 235), but the chapter does not reflect in what ways the research or the authorsô positioning relative to this research is decolonial. In fact, though the authors purport to use decolonizing phenomenology to explain how sub-Saharan African immigrants in western Canada cope with climate risks, they neither explain what this term means nor demonstrate how their results are unique to the sub-Saharan perspective as opposed to other people in western Canada experiencing the same climate disaster risks. For us, the lack of a final concluding chapter summarizing each chapterôs key contributions, anchoring key learnings, and/or emphasizing important takeaways made these missed opportunities more apparent.

Overall, however, this book stands out and makes a strong contribution to the field. There are few books dedicated to unpacking what decolonization looks like in everyday practice, and even fewer dedicated to racialized settlersôpractical undertaking of decolonization in the Canadian context. As two Black immigrant women settlers to Canada, we find the examples and lessons in this book relatable and practical. The emphasis on learning, unlearning, and relearning was an underpinning premise artfully and consistently woven throughout the chapters. The book did an excellent job of illuminating how people from different backgrounds relate to the challenges of colonization and how these experiences foster a sense of solidarity and respect for Indigenous peoples, customs, and traditions and a strong commitment to reconciliation and decolonization. Given Canadaôs large and growing diversity, it is important to deepen our understanding of what it means to live on Indigenous lands. This book centres racialized perspectives, effectively situating reconciliation and decolonization as a collective responsibility and demonstrating the practical contributions settler immigrants of colour are making, and could make, in achieving these aims. We therefore recommend this book to readers of i*n education*.

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Marcella R. J. Bollers was born in Toronto and is of African Guyanese descent. She lived part of her early childhood in Regent Park which historically has been a racialized under-resourced community in Toronto undergone gentrification. After her family experienced a racist attack, she later moved to the east end to what is now known as the Upper Beaches. In 2023 she graduated with her Master of Social Work from the Factor-Inwentash Faculty of Social Work at the University of Toronto where she specialized in Social Justice and Diversity.

Will Burton is a lecturer in social and environmental education at the University of Winnipeg. He spent a decade as a classroom teacher and school leader at the Early and Senior Years level in Winnipeg, working in traditional and alternative programs, predominately advocating for and practicing project-based learning approaches to teaching and learning. He remains involved in the K-12 system, most recently through action research projects. Will's research is currently focused on place-based education theory and practice, climate change education in the kindergarten to post-secondary system in Manitoba. Will is currently a PhD candidate in Educational Studies at Lakehead University.

Dr. Ardavan Eizadirad (@DrEizadirad) is an Assistant Professor in the Faculty of Education at Wilfrid Laurier University. He is the author of Decolonizing Educational Assessment: Ontario Elementary Schools and the EQAO (2019) and co-editor of The Power of Oral Culture in Education: Theorizing Proverbs, Idioms, and Folklore Tales (2023 with Dr. Njoki Wane), and Enacting Anti-racism and Activist Pedagogies in Teacher Education: Canadian Perspectives (2023 with Drs. Zuhra Abawi & Andrew Campbell). Dr. Eizadirad is also the founder and Director of EDIcation Consulting (www.EDIcation.org) offering equity, diversity, and inclusion training to organizations.

Maria Fjærestad holds a master's degree in mathematics education from Oslo Metropolitan University. She is currently a school teacher in Moss, Norway. Her professional interests focus on integrating digital tools to enhance the teaching and learning of mathematics. In particular, she is interested in exploring how digital tools can be used effectively in the classroom to deepen students' understanding and to cultivate their sense of achievement. Through her research, she also seeks to inspire other teachers to recognize the relevance of mathematics in an increasingly digital world.

Michael Link is an associate professor in the Faculty of Education at the University of Winnipeg. His research explores nature-based approaches that support student well-being and the transition to a just and sustainable future. Prior to his service as a teacher educator and researcher, Mike taught for 13 years in elementary schools in Abbotsford and Surrey, British Columbia.

Jane P. Preston has been a middle school teacher in Canada, Taiwan, and Kuwait, and an Associate Professor at the University of Prince Edward Island, Canada. Currently, she is an Adjunct Professor at the University of Prince Edward Island. Her research topics include educational leadership, Indigenous issues, parent involvement in schools, rural education, and international education. Primarily specializing in qualitative research, she commonly uses research designs such as case study, phenomenology, and narrative inquiry.

Dr. Donna H. Swapp is an Assistant Professor, Educational Leadership, at the Faculty of Education, University of Regina. Her research interests and teaching are in the areas of school leadership, including the work and wellbeing of school leaders, critical education policy analysis, social justice leadership, and decolonizing educational leadership. Donna draws on postcolonial, decolonial, and other critical frameworks in her scholarship, including in her latest research project exploring the work and wellbeing of Black school leaders in Canada, Grenada, and Jamaica, funded by the Spencer Foundation.

Constantinos Xenofontos is a professor of mathematics education at Oslo Metropolitan University in Norway. He has previously held academic positions in the UK and Cyprus. His research focuses on the sociocultural and sociopolitical dimensions of mathematics education, with particular attention to mathematics teachers at various school levels and career stages. Specifically, he investigates how cultural, social, and political factors shape teachers' beliefs and knowledge, influencing their mathematical practices. Additionally, his work explores the mathematical identities of learners from traditionally marginalized groups.