

EDUCATION
SEMINAR

Contemporary Issues in Education

UNIVERSITY OF OTTAWA'S
FACULTY OF EDUCATION



Contemporary Issues in Education

**A collaborative project by members of the Contemporary
Issues in Education doctoral seminar at the
University of Ottawa's Faculty of Education**

Edited by Frank M Ventrella

Published by The Best Cohort Press

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Foreword

Ever since there were schools, there was a social context in which to place them. Schools both reflect and are reflected in society. From headlines in newspapers to memes on social media, schooling looms large in the public imagination. This might help to explain the broad public interest in contemporary issues in education and foretells the importance of this book. To engage with contemporary issues in education is to engage with democracy itself—the will to decide together answers to the question literary theorist Amanda Anderson poses: How should we live? “How should we live?” is a radical question because it implies we have choices about the way we organize ourselves and that those choices have consequences—social, political, and economic. Free or regulated markets? Solutions to problems through individual, private endeavours or through collective public undertakings? Schools aimed at preparing students for the world that is or preparing them to change that world for the better or, further yet, to negotiate the balance between the two? Education has the potential to take on the great issues of contemporary life, and the chapters in this book advance those very conversations.

The book is divided into five sections: Controversial Issues in Education; Real-World Learning and Assessment; Social Justice in Education; Digital Technologies in Education; and Mental Health and Safety in Education. In each section, the authors take on issues of schooling and culture through multiple lenses. They explore the kinds of issues the education community faces including highly controversial ones and seek to connect them to larger social, political, economic, and cultural developments in Canada and elsewhere. They investigate the benefits and weaknesses of a variety of perspectives on education and explore different theories of teaching and learning as they are reflected in actual practice including the tensions and dilemmas competing perspectives raise. Specifically, the chapters investigate social justice education including, critical thinking, and student agency; they explore education for sustainable development, access ability in AI, and digital inequality; they probe the scourge of school violence, mental health in higher education, and sex education, and more.

Together, these chapters untangle the intertwined issues of contemporary education and modern life. Each topic addresses difficult questions that have seemed intractable to generations of educators. It is these big questions that comprise the raw material for a refreshing look at the many faces of school and society. When you read this compendium, your long-held beliefs about schooling will be questioned, reexamined, and challenged. You won't go thinking about schools in the same way you did before reading this book.

—Joel Westheimer, Ottawa, Canada, March 2024

SECTION I

Controversial Issues in Education

Suye Qi and Muhammad Faisal

In this book section, we embark on an exploration of the controversial issues in education, spotlighting its pivotal role in navigating societal values, global challenges, and the intricacies of cultural norms.

In Chapter One, we navigate the complex terrain of Comprehensive Sexuality Education (CSE) in China, critically examining its applicability within a societal fabric deeply woven with Confucian ideologies. This discussion transcends traditional educational contents, probing the tension between global health imperatives and moral panic, between advancing educational justice and navigating cultural sensibilities. This exploration scrutinizes the challenges and opportunities inherent in reconciling CSE with Confucian values, aiming to foster a holistic understanding of sexuality education that is inclusive of emotional, intellectual, and social dimensions.

In Chapter Two, we also explore how the current identities, beliefs, and perceptions of teacher candidates regarding sustainability impact their readiness to incorporate practices aligned with Education for Sustainable Development (ESD) as advocated by the United Nations (UN) Decade of Education for Sustainable Development (2005-2014) within their classrooms. There are concerns that the multidisciplinary approach of ESD might lead to a shift towards a more anthropocentric (human-centered) orientation, potentially deviating from core environmental education principles. This second article aims to explore the implications of this potential anthropocentric shift within ESD, particularly in the context of teacher education programs. By attempting to understand these factors, teacher education programs can develop targeted strategies to support pre-service teachers in their journey toward becoming effective in teaching for sustainability. We also examine the challenges and opportunities associated with integrating ESD into teacher education programs.

Ultimately, the second article aims to contribute to ongoing efforts to prepare future educators to address critical sustainability challenges and empower their students to become agents of positive change.

Together, both chapters in this section not only reflect the diverse spectrum of contemporary issues in education but also exemplify the potential of educational reform to address societal challenges. By examining public health with cultural sensitivity and environmental sustainability, this chapter invites readers to consider the power of schools and teachers in shaping a more just, sustainable, and informed world.

1. Between Traditions and Transformations: Navigating the Integration of Comprehensive Sexuality Education within China's Confucian Culture Context

Suye Qi

Given the prevalence of social issues, such as the spread of sexually transmitted and blood-borne infections (STBBIs), child sexual abuse, teenage pregnancy, and gender discrimination, along with various challenges faced by marginalized groups, the critical role of sex education in promoting educational justice and social well-being is increasingly recognized globally (Lamb & Randazzo, 2016). Traditional approaches, such as the Abstinence-Only-Until-Marriage (AOUM) model, have faced significant criticism for neglecting adolescents' rights to sexual and reproductive freedom and health, embedding sex education within an ideology of fear and shame (Fine & McClelland, 2006). In stark contrast, Comprehensive Sexuality Education (CSE) represents a paradigm shift toward embracing a holistic view of sexual health and rights, addressing the complex interplay between *thick desires*, as described by Fine and McClelland (2006)¹, and broader societal issues to foster gender equality and educational equity (Haberland & Rogow, 2015).

China currently stands at the forefront of a global controversy surrounding the implementation of CSE, grappling with the challenge of integrating this modern educational framework within a society steeped in Confucian values and political norms. This tension was vividly illustrated when a series of CSE-based textbooks titled *Cherish Life*² were withdrawn from a

¹ Fine and McClelland (2006) state that young individuals have the right to aspire widely (thick desires) towards meaningful intellectual, political, and societal participation, the potential for economic self-sufficiency, autonomy in sexual and reproductive matters, safeguarding against racially and sexually motivated harm, and envisioning a future for themselves (p.300).

² "Cherish Lives," a sex education textbook series for primary school students aged 7 to 11, sparked controversy upon its full release in 2017. It covered topics from reproductive organs to celibacy and same-sex relationships. Following a substantial complaint by a Hangzhou

school in Hangzhou³ by the Education Bureau, following intense parental backlash against the textbooks' "explicit" content. The nationwide ban on these textbooks since 2019 also highlights the profound cultural resistance against shifting norms in sexuality education (Ji & Reiss, 2022). This incident serves as a critical juncture, reflecting the broader struggle between advancing sexual education and adhering to deeply ingrained cultural and moral values.

This chapter aims to explore the intricate dynamics of implementing CSE within the Chinese context, examining the intersections between Confucian ideology and the goals of CSE. By analyzing the potential for harmonization between Confucian societal regulations and CSE's advocacy for a broad understanding of sexuality—including emotional, intellectual, physical, and social dimensions—this chapter seeks to propose viable pathways for reconciling traditional values with the pressing need for effective sexuality education in China.

The Context of Sexuality within Confucianism

In delving into the landscape of sexuality education in China, it is imperative to recognize the profound influence of Confucian ideology. Considering Confucianism is an extensive philosophical system covering almost every aspect of Chinese society, I will mainly focus on the parts related to sexual culture including desire, family values, and gender roles.

First, classical Confucianism espouses an ascetic orientation towards sexual matters, framing sex within the goals of marriage and procreation rather than pleasure or desire (Xu, 2006). This perspective not only subjugates sexual desire to marital duty but also embeds gender hierarchies within sexual relations, with men positioned as dominant. Such a framework excludes non-reproductive aged demographics—children, adolescents, and the elderly—from the sphere of sexual behavior (Liang et al., 2016; Wile, 2018). Moreover, Confucian norms mandate control over sexual desires to differentiate humans

parent, the books were removed from a local school, and by March 2019, they were banned from public sale, disappearing from book markets and online platforms, and thereby triggered the discussion in this article (Ji & Reiss, 2022).

³ Hangzhou is one of China's first-tier cities and the capital city of Zhejiang Province in China.

from animals, advocating for rational enlightenment over primal instincts (Tang, 1995). The underlying message is one of self-discipline; succumbing to unchecked desires is equated with a descent into animality. More importantly, a flood of sexual desire is viewed as causing people to behave irrationally, which ultimately leads to the collapse of the family and even society as a whole (Xu, 2006).

However, it is also worth noting that Confucian texts may not inherently denigrate sexual behaviors between men and women. While Confucianism primarily draws from texts like the *Analects* and the *Doctrine of the Mean* for its ethical teachings, it also engages with the *Yi Ching*, a text revered for its exploration of the dynamics of *yin* (female) and *yang* (male). Such engagement acknowledges the complementary polarities of male and female forces which are essential for the creation and the continuity of life (Wile, 2018). This suggests that the union of *yin* and *yang*, far from being a mere societal duty, is viewed as a fundamental cosmological principle within the broader spectrum of Chinese philosophical thought. The issue, then, lies not in Confucianism itself but in its historical co-option by the ruling elite as a tool for societal control. This transformation of Confucian doctrine into an instrument of authority effectively shackled sexual culture, forbidding the expression and discussion of sexual desires. Consequently, normal sexual beliefs and behaviors became vilified and positioned as antithetical to moral and social order.

Furthermore, Confucian culture is marked by a pronounced discourse on gender roles characterized by societal expectations that dictate the division of labor and prescribed behaviors for males and females. Traditional norms encapsulated by the “*Three Obediences and Four Virtues* (三从四德)” delineate women’s roles within a framework of obedience (i.e., to father, husband, and son) and virtues (i.e., loyalty, dignified appearance, respectful speech, and familial care; Cheng & Brown, 2009; Ebrey, 1991). These expectations have been critiqued for perpetuating gender discrimination and reinforcing a patriarchal view where women’s roles are seen as secondary to men’s (Gao, 2003; Li, 2000). Men, conversely, are imbued with a sense of responsibility to support their families and contribute to society and to the country, often through political participation (Ebrey, 1991). However, this delineation of gender roles, while originally tending to be based on societal

divisions of labor, may not inherently posit women's inferior social status; but it has been interpreted as such, which, in turn, has led to calls for a re-evaluation within the context of modernity and education.

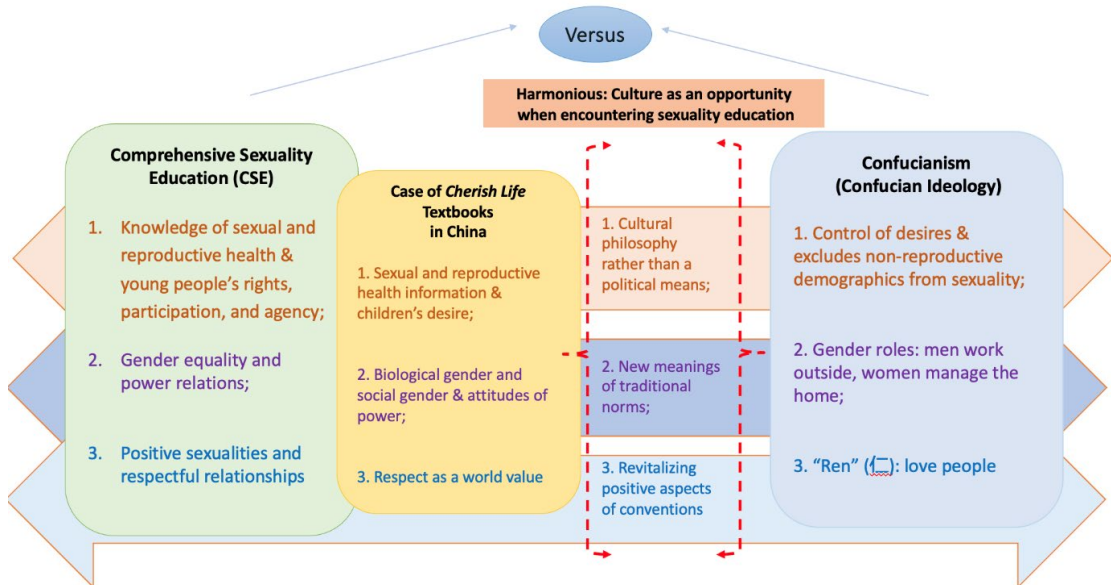
Finally, “*ren* 仁” is the cornerstone of Confucianism, and although it does not directly relate to sexual culture, it lays a philosophical foundation for each aspect of society including sex values. “*Ren*” signifies the act of caring for others and treating them well, embodying a profound sense of compassion. A person who embraces “*ren*” harbours a deep love for others and commits to actions that care for and enhance the well-being of the community. For instance, it advocates for the principle that one should not expect others to undertake what one is unwilling to do oneself. Therefore, the essence of “*ren*” involves maintaining interpersonal relationships grounded in love and kindness (Shi, 2018). Fundamentally, the “*ren*” emphasizes deep respect for human dignity, an entirely different perspective that indicates the possibility of harmonizing with the principles underlying comprehensive sexuality education. This potential for harmonization will be explored in greater detail towards the end of the next section.

An Analysis of CSE and Its Implementation in Chinese Confucian Society

Comprehensive Sexuality Education (CSE) is gaining global support as a critical way to educate youth on rights and sexual health, boosting social well-being and aiding sustainable development (Haberland & Rogow, 2015). In 2020, China officially integrated sexuality education into its *Law on the Protection of Minors*, which is a supportive nod to CSE and signals a transformative shift in China's approach to sex education. In the intricate dance between established cultural norms and educational progress, the *Cherish Life* textbooks emerge as a pivotal case in examining the reception of CSE within a Confucian-influenced society. This section will situate this series of sex-ed textbooks at the crossroads of CSE's global principles and the traditional ethos of Confucianism for a deeper exploration of their complex interplay. Please see Figure 1 for an overview of the analysis regarding CSE and its implementation in Chinese Confucian society. The aspects of this analysis will now be discussed in the numbered order in which they appear.

Figure 1

CSE and Its Implementation in Chinese Confucian Society



First and foremost, the CSE framework is anchored in the rights, participation, and agency of children and adolescents, positioning them at the core of its educational approach (Miedema et al., 2020). CSE acknowledges the young's right to comprehensive sexual and reproductive health information, equipping them with the knowledge to protect against sexual abuse and skills for informed decision-making and respectful interactions. More fundamentally, CSE moves away from an adult-centric hegemony over sexual discourse, embracing instead the desires and pleasures of children and adolescents. It recognizes them as full participants in a discourse on sexuality that is grounded in human rights (Fine & McClelland, 2006; Haberland & Rogow, 2015). The *Cherish Life* textbook series exemplifies this approach by progressively providing medical knowledge of sexual organs and affirming sexual desires in an age-appropriate manner. For instance, the textbook for Grade 3 states that "masturbation is an important way for us to explore our bodies. It helps us understand what makes our body feel comfortable and satisfied. Masturbation is normal sexual behavior" (Liu, 2017c, p.22, as cited in Ji & Reiss, 2021, p.503).

Yet, this candid acknowledgment of sexuality clashes with Confucian conventions that traditionally exclude minors from sex discourse and advocate restraint of desire. The introduction of such content to Chinese education sparks moral panic among parents and society, reflecting deep-rooted tensions between contemporary values and historical precedents. However, if Confucianism is reconsidered—not as an archaic mechanism for political control but as a cultural philosophy—the resistance to discussing desires may not need to be as stringent in today’s China where the populace is seen as the architect of history and the collective body of people as the central figure. As outlined in the second section, the core tenets of Confucian tradition do not inherently dismiss discussions about sexual desire. The suppression of such discourse emerged as Confucianism evolved into a significant ideological tool for political control. With the ongoing discourse on democracy and human rights in China, there is an emerging imperative to re-root Confucianism in its cultural essence, distancing it from its historical role as a political instrument. Seen in this light, Confucianism could serve as cultural capital to enrich China’s cultural vitality, offering flexibility in the evolution of educational thought, including the advancement of sex education.

Secondly, the discourse around CSE transcends mere knowledge dissemination of sexual and reproductive health; it confronts entrenched gender biases and power imbalances head-on. The framework is not just content to inform but is driven to challenge the discrimination, oppression, and marginalization historically endured by women and girls while simultaneously advocating for the recognition and rights of LGBTQ+ individuals. This proactive stance fosters an environment where young people are nurtured to embody respect, understanding, and empathy, irrespective of gender, race, age, class, or sexual orientation (Miedema et al., 2020). The *Cherish Life* textbook series reflects these values not only by discussing biological sex differences but also by fostering a diverse understanding of social gender roles and rights, tying them to contemporary attitudes and behaviors. For instance, it communicates that men and women can exhibit qualities such as independence and empathy equally (Liu, 2017b, p.32) and emphasizes that career choices should not be constrained by gender (Liu, 2017a, p.33). It further affirms that all sexual orientations are valid and that human rights must be respected regardless of one’s orientation (Liu, 2017d, p.16).

Such affirmations signify a radical departure from traditional Confucian norms of gender roles and question the long-standing power dynamics established by the “*Three Obediences and Four Virtues*” and assumptions of heteronormativity. However, as Confucianism evolves back to its cultural roots, it can be recontextualized into a living philosophy that resonates with today’s social justice principles. For example, a modern reinterpretation of the “*Three Obediences and Four Virtues*” in China calls for both men and women to be worldly, loving, and self-guided (*Three Obediences*), promoting skillfulness, articulation, a blend of qualities and knowledge, as well as self-confidence and grace (*Four Virtues*; Baidu, 2023). These adaptations propose a balanced paradigm for the whole society that aligns more closely with the objectives of CSE. The key, then, lies in the critical realignment of Confucianism’s principles with the current cultural and educational ethos. It is this redefined cultural backdrop that can potentially offer a malleable approach to CSE, fostering a new social climate where comprehensive sex education can flourish amidst traditional values.

Finally, the respectful relationship serves as the last core of CSE, weaving together all the themes above-mentioned. This principle extends beyond the scope of ensuring pleasurable and consensual sexual relations, advocating for equal respect and care for all individuals (Miedema et al., 2020). This theme resonates prominently in the *Cherish Life* series, where the discussion on values is foregrounded. The series articulates, “I believe that all people are equal, and thus I will view everyone with equality and respect...” (Liu, 2017e, p.23), mirroring Confucius’ own articulation of “*ren* (仁)” as love for all without social stratification. This call to “*ren* (仁)” is aptly reflected in these textbooks’ approach, which can be seen as a direct application of Confucian love and respect. Furthermore, Nel Noddings’ theory of *care* (1984, as cited in Tan, 2022) suggests that a caring relationship achieves its fulfillment when both the caregiver and the receiver experience satisfaction. Confucianism similarly recognizes the joy derived from aiding others, treating this act as a virtue (Tan, 2022). *Cherish Life* echoes this sentiment by underscoring familial love, friendship, and appreciation for diverse cultures.

The congruence between Confucian cultural traditions and CSE indicates that there is potential for a harmonious integration of values that

resonate with contemporary sensibilities. Critically, it poses the question of whether this alignment can form the cornerstone of a renaissance in traditional Chinese culture within the modern context, particularly in the development of localized sex education materials. Such an integration could be pivotal in reducing resistance to the adoption of comprehensive sexuality education as it aligns with the evolving values of society while honoring its cultural heritage.

Overall, the map above illustrates both the friction and the potential for harmony between comprehensive sexuality education (CSE) and Confucianism in the Chinese context, particularly through the lens of the *Cherish Life* textbooks. CSE emphasizes knowledge of sexual health, gender equality, and positive sexual participation, whereas Confucianism is centered on controlling desires and maintaining traditional gender roles. Nonetheless, I believe the tension between the two can be alleviated by returning Confucianism to its “culture role,” infusing old traditions with new interpretations and championing aspects of traditional culture that remain pertinent today. Figure 1 portrays these intricacies.

Concluding Thoughts

This chapter has explored the prospect of reducing resistance to the implementation of Comprehensive Sexuality Education (CSE) within a Chinese Confucian context. By arguing for the return of Confucianism as a cultural philosophy rather than as a political means, this author has demonstrated the potential for imbuing traditional culture with new meanings and for revitalizing positive aspects of conventions that resonate with contemporary society; crucially, there exists a tangible opportunity to mitigate the cultural friction often experienced in educational settings. This may not only address the concerns of moral panic but also pave the way for a harmonious integration of CSE principles with Confucian ideology. The analysis presented here also opens the door to a potential synergy between progressive educational frameworks and the rich tapestry of Chinese cultural philosophy, offering a promising outlook for the future of sexuality education in China.

Significantly, according to Mukoro's (2023) five narratives⁴ on the intersections between sexuality education and culture, "culture is very useful, a huge resource for sexuality education... it could be an opportunity..." (p. 427). This view casts culture as an advantageous foundation for the development of sexuality education, thus considering it a valuable asset rather than an obstacle. Informed and inspired by this narrative, implementing CSE in China requires not only the development of culturally sensitive educational materials but also the fostering of open dialogues between Confucian principles and sex education, thus overcoming societal hesitations around discussions of sexuality in China. Ultimately, the successful melding of CSE and Confucian ideology has the potential to stand as a model for other societies grappling with similar cultural and educational dilemmas, underscoring the universal importance of respecting cultural heritage while embracing educational progress.

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⁴ Five narratives are included: (1) Culture as the main explanation; (2) The authority or authorities of culture; (3) Culture as a source of conflict; (4) Weaponization and politicization of culture and sexuality education (5) Culture as an opportunity (Mukoro, 2023).

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2. Education for Sustainable Development

Muhammad Faisal

The ever-intensifying climate crisis serves as a stark reminder of the urgency for a global shift towards sustainability. Navigating solutions requires grappling with complex ethical questions that touch upon fundamental issues of justice, responsibility, and how we value the environment (Serafini et al., 2022). Kopnina (2012) argues that the escalating climate crisis underscores the critical need for a paradigm shift in global education towards sustainability and eco-centrism. The concept of sustainable development, acknowledging the interconnectedness of ecological, economic, and social systems, gained official recognition with the 1987 Brundtland Report, "Our Common Future". However, earlier documents, such as the Belgrade and Tbilisi reports, focused mainly on the "environment" (Holden, Linnerud, & Banister, 2014). However, Agenda 21 marked a shift towards a more holistic approach to incorporating social and economic concerns alongside environmental issues. Agenda 21 in UNESCO (1993) explicitly states the need for environmental and development education to address all dimensions of our environment, encompassing the ecological, physical/biological, and socio-economic spheres.

In their study, Alsop et al. (2007) investigated the connection between teacher candidates' identities, beliefs, and understanding of sustainability, as well as their preparedness to teach Education for Sustainable Development (ESD). They employed case studies that explored methods for integrating local environmental practices into teacher education. These case studies revealed two main implications: one emphasizing the inherent connection between humans and the natural world, and another that highlighted the importance of place-based learning and fostering social responsibility. Alsop et al. (2007) argue that by understanding the importance of these findings and incorporating them into teacher education, we can better equip future educators with the tools they need to address sustainability challenges.

Fischer et al. (2022) emphasize the importance of integrating Education for Sustainable Development (ESD) into preservice teacher education programs for a few key reasons. Firstly, it equips teachers with the necessary pedagogical tools and knowledge to effectively educate future generations about sustainability. This ensures students develop an understanding of environmental and social issues and their interconnectedness. Secondly, by fostering responsible citizenship, ESD in teacher education helps students develop the values and skills needed to contribute to a sustainable future. This could involve critical thinking, problem-solving, and acting towards a more just and ecologically balanced world. Integrating ESD into teacher education programs is seen as crucial for preparing future generations to address the complex challenges of sustainability (Inwood & Jagger, 2014). Kopnina (2012) posits that Education for Sustainable Development (ESD) takes a unique approach to learning. Unlike traditional environmental education (EE) which focuses on environment as a subject mostly taught separately, ESD emphasizes an interdisciplinary approach. This means ESD transcends the boundaries of individual subjects, recognizing the interconnectedness of various fields. By integrating knowledge from science, social studies, ethics, and other disciplines, ESD fosters a comprehensive understanding of sustainability issues (Lautenbach & Heyder, 2019). While contrasting ESD with traditional environmental education (EE), Kopnina (2012) points out ESD's broader scope. She argues that while EE may focus primarily on ecological issues and scientific understanding of the environment, ESD incorporates social and economic aspects alongside environmental ones. This suggests ESD aims for a more holistic understanding of sustainability, recognizing the interconnectedness of environmental health, social justice, and economic development.

Literature suggests that understanding teacher identity is crucial for effective implementation of Education for Sustainable Development (ESD) practices. Teachers' identities are multifaceted, shaped by personal experiences, societal influences, and the school environment (Almeida et al., 2018). Elliott and Inwood (2019), in their study, found that if a teacher's professional identity aligns with ethical and conceptual frameworks of sustainability, they are more likely to embrace ESD initiatives. Conversely, a mismatch between a teacher's

identity and ESD goals can create resistance or superficial implementation. Recognizing these complexities would help educators and policymakers in developing targeted support that resonates with teachers' existing identities and fosters a deeper commitment to ESD. Teachers' existing beliefs and values regarding sustainability significantly influence their preparedness to implement ESD practices (Almeida et al., 2018). If a teacher holds strong environmental values, they'll likely be more enthusiastic about ESD and approach it with a solutions-oriented mindset. Conversely, teachers with limited environmental awareness or who prioritize other educational goals may find ESD implementation challenging (Lautenbach & Heyder, 2019). By understanding these existing belief systems, educators can tailor professional development programs to address knowledge gaps and connect ESD to teachers' existing values, fostering a stronger foundation for effective implementation.

Almeida, Moore, and Barnes (2018) conducted a study where the results suggest a potentially greater impact of interventions focused on ESD during initial teacher training programs. Since teacher identity is still developing during this stage, they found that pre-service teachers may be more receptive to integrating sustainability concepts into their professional identity from the outset. This focus on ESD during initial training equips future educators with the knowledge, skills, and values necessary to effectively implement ESD practices throughout their careers. However, equipping future educators with these necessities presents several challenges. For instance, curricula are often packed, leaving limited time to delve deeply into sustainability topics. Additionally, schools may lack resources, including access to nature, specialized training for teachers, or even proper waste management practices (Kopnina, 2012). Teacher anxieties can also arise due to unfamiliarity with the subject matter or a perceived lack of student interest. Overcoming these challenges requires innovative approaches and strong institutional support.

Teacher education programs focused on ESD hold immense potential for fostering responsible citizenship and a sustainable future. Strategies like integrating sustainability concepts across various subjects, rather than as a standalone topic, can help overcome time constraints. Furthermore, professional development programs can equip teachers with the knowledge and confidence to navigate complex sustainability issues. Hands-on learning

activities, like environmental restoration projects or community engagement initiatives, can bring sustainability to life for both teachers and students (Serafini et al., 2022). By fostering a deeper understanding of environmental challenges and solutions, ESD teacher education empowers future generations to become responsible citizens who actively contribute to a sustainable future.

This chapter highlighted the importance of integrating ESD across the curriculum, equipping all teachers, not just specialists, with the knowledge and skills to educate for sustainability. Effective ESD implementation hinges on building teacher capacity and fostering a sense of ownership. Teacher buy-in is crucial for programs to be seen as valuable additions, not external burdens. Furthermore, the study underscores the significance of addressing teacher identity and existing beliefs. Teachers who see themselves as environmental stewards are more likely to champion ESD initiatives. By creating professional development opportunities that engage teachers in shaping programs and reflect on their own sustainability views, teacher education can play a transformative role (Inwood & Jagger, 2014).

This chapter also offers a hopeful vision for the future. By prioritizing teacher identity and fostering a deep understanding of sustainability, ESD teacher education has the potential to empower future generations. When teachers are equipped with the knowledge, skills, and confidence to integrate ESD effectively, they can nurture responsible citizens who actively contribute to building a more sustainable world (Fischer et al., 2022). Through collaborative learning, ongoing reflection, and a focus on practical application, ESD teacher education can bridge the gap between environmental challenges and meaningful solutions, paving the way for a brighter future.

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SECTION II

Real-World Learning and Assessment

Karli Bergquist and Christian Aglah

In this book section, we will explore topics related to alternative approaches to teaching and learning. We think of education as something that must be accessed by students to be active and healthy members of society. The institutionalization of school has led to standardized curriculum and assessment that leaves students wondering: How is this going to help me? What is the point?

Karli Bergquist, in Chapter Three, will explain how mathematics education can be rehumanized through real life connection and paying attention to the daily lives of students. In Chapter Four, Christian Aglah will discuss the results of a literature review investigating the benefits of alternatives to testing. Both authors hope their research will lead to more just and meaningful education.

3. Ethnomathematics: Learning from Reality

Karli Bergquist

Reality and mathematics are strange terms to juxtapose. My definition of mathematics comes from Bishop (1990) who theorizes that mathematics emerges whenever people are involved in designing, playing, estimating, counting, locating and explaining (pp. 59-60). While mathematics would not exist without participating in reality, I far too often encounter people who tell me they are not math people and that they do not use math in their daily life. Just recently, while the hairdresser was cutting my hair, I asked if they used math for their job, and they said “no”. I followed up with “Are you sure?” and we had a conversation, one that I have repeatedly, about the mathematics present in everything they do. I am not sure how it became the case that people do not think about mathematics in everyday life, but I believe it is a contemporary issue in education worth addressing. In Ontario, the Mathematics curriculum refers to reality in at least 20% of its content (see Table 1), and so there is an expectation for all students to become math people, just as they are expected to become literate. In this chapter I will explain how I think about mathematics education and reality by combining ideas from ethnomathematics, funds of knowledge, as well as situated learning and communities of practice. Before a theoretical discussion, I will ground my thinking in reflection about the Ontario mathematics curriculum (OMC) and the significance it places on learning from reality.

I started playing with mathematics education when I was an elementary school teacher in Ottawa, Ontario with less than 10 years’ experience. I was teaching Grades 7 and 8 students at a diverse school with many challenges in the learning environment. My background in second language teaching, English as a Second Language and English Literacy Development in particular, gave me insight into culturally responsive teaching practices and how to make learning meaningful by opening learning spaces to a plurality of ideas,

activities, strategies, identities, languages, abilities, attitudes, and so forth. Since then, I have been thinking about the ways mathematics emerges from lived experiences and the harm that is caused when we do not pay attention to this (Bergquist, 2020). Students become disconnected, “not math people”, sometimes as early as Grade 1, by going to school. I am interested in how this might change so that more people feel confident about mathematics and its impact on their lives. I suggest that when mathematics education is re-humanized (Gutierrez, 2013) through being grounded in lived experiences, everyone has an opportunity to participate. Becoming a “math person” involves developing self-efficacy with knowledge and skills and is deeply connected to identity in relation to others and the world (Gutierrez, 2013). How can you identify as a “math person” if you never see the math all around you or have creative experiences? As an education researcher I am wondering: How do people identify mathematics that are meaningful to their lives? Which and how are mathematics learned by participating in daily life? These questions will be more relevant after demonstrating the significance of reality to the learning of mathematics by analyzing the Ontario mathematics curriculum. I will then explain how ethnomathematics, funds of knowledge, along with situated learning and communities of practice are helping to theorize possibilities.

In Ontario, the current elementary mathematics curriculum was released in 2020. While it is meant to be accessed digitally with clickable links and built in resources, a 594-page PDF version is available. This version includes explanatory sections about the foundations of mathematics instruction and assessment, considerations for program planning as well as the detailed grade level expectations. It is a publicly available, comprehensive resource that is informed by contemporary research in mathematics education (Suurtamm, 2022). The results of a simple document analysis demonstrate that there is a significant expectation for mathematics education in Ontario to relate to reality. The analysis involved identifying the following key words to search using the “find” feature in Preview to tabulate pages containing them: reality, real-life, daily-life, everyday, and real world. I recorded the page frequency for each term and then added related terms to the documentation after realizing that these were important for meaning. Please note that while each page had at least one reference, this does not mean that any given term only appeared once on the

page. Table 1 summarizes the findings. In total, 126 of 594 pages ($\approx 20\%$) have at least one reference to lived experience.

Table 1

Frequency of terms related to lived experience in the Ontario Curriculum (2020)

<i>Search Term</i>	Reality	Real-life	Daily-life	Everyday	Real-world
<i>Frequency</i>	1	57	15	43	10
<i>Related Terms</i>	Augmented	Situations Application Context(s) Problems Language Issues Objects Connections Experiences	In Aspects of	Life Situations Problems Contexts Language Examples	Situation Context Problem Experiences Meaningful Problems

Real-life, *real-world* and *everyday* seem to be mostly adjectives, and *daily life* seems to be a noun. Since the term *reality* was only used once, and in reference to a specific technological tool, it is not especially helpful to my question. However, the other configurations proved to be valuable. For instance, the nominal phrase *everyday situations* is very useful because it begs the question “what is an everyday situation?” The curriculum acknowledges that students will offer multiple ways of knowing, doing, and being and that multiple perspectives should be valued (p. 103). A dilemma, then, is how to capture the multiple realities so that each student has meaningful mathematics to work with as they face and prepare for the challenges of the 21st century. Ethnomathematics, discussed in the next section, shares a view that embraces multiple perspectives and inspires multiple solutions from learning together (D’Ambrosio, 2018. p. 236).

D’Ambrosio’s “Programme Ethnomathematics” (2018) has an explicit ethical stance of achieving social justice which includes environmental sustainability. “Ethno” is more than “ethnic” and refers to the distinct and specific natural and socio-cultural environments where individuals live (p.

231). Through the study of how humans deal with reality, D'Ambrosio's ethnomathematics is advanced to reformulate mathematics education so that humans can achieve peace among each other and with the environment. Given the complexity of human knowledge systems, strategies to achieve this must be transcultural and transdisciplinary, acknowledging the permanent state of change that is living a human (and any) life. Dominant mathematics discourse interferes with human connection to mathematics as it structures society (Hauge & Barwell, 2017). D'Ambrosio (2018) argues that we need to extend our understanding of "strategies of action on to deal with reality," especially for people whose strategies are invisible (p. 231). By making visible the interconnectedness and collaboration required of individuals to be successful (minimally at surviving), we can imagine a mathematics education that supports peace in its broadest sense. By grounding the learning of mathematics in the lived experience of people, which is inherently diverse, we provide opportunities for students to make sense of their present world and plan for the future in ways previously denied to them. D'Ambrosio argues that planning for a peaceful and sustainable future is not possible using Number Theory and Euclidian geometry alone because the world is far too complex, socio-culturally diverse, and permanently changing.

With this epistemological view of mathematics, I am encouraged to think of mathematics education that harnesses the *strategies of action to deal with reality* for individuals and communities. Funds of knowledge is an approach that values the lived experience and interrelationships of people with others and the world. Originally, Gonzalez, Moll and Amanti (2005) set out to work anthropologically to understand the practices for individual and household well-being to connect classrooms and communities. Using ethnographic approaches such as observation and conversation, meaningful mathematics were identified by educators in the activities of children working in the community on weekends that could be leveraged for learning in school. Building upon this original insight of valuing lived experience, especially from marginalized perspectives, Zipin's (2009) research goes beyond utilitarian constructions of knowledge to a transformational education that requires the making visible of "dark funds of knowledge and deep funds of pedagogy" (p. 325). This brings attention to ways of knowing and transacting knowledge, not just the content of knowing. Zipin identifies a significant disconnect between

school worlds and life worlds which is a disservice to students, especially those whose lifeworld is not reflected in the school world where a mainstream culture tends to dominate. To achieve social justice, according to Zipin, we must “design curriculum that makes meaningful connection with ways of knowing in learners’ lives beyond school” (p. 317). It is based on the premise, like D’Ambrosio, that all “lives embody both intelligence and knowledge” (Zipin, 2009, p. 317). Zipin’s socio-cultural-political perspective is that dominant cultural structures reproduce themselves and are reticent to anything new that might undermine the elite; thus, a funds of knowledge approach is a way to bring forth what has been ignored or blurred. For Zipin, strategies of action for dealing with reality are described as “the multiple and contingent relations and practices of people in situated lifeworld contexts, and the meanings and values they construct therein” (p. 320). Funds of knowledge is an approach that provides “an ethical shift in determining what has learning value” (p. 319).

Connection to reality in a classroom in Ontario today might be accomplished by using a real-world problem to develop strategies, model thinking, apply skills or generate theories. Often, this takes the form of stories or prompted situations. Less often, especially if teachers are using prepared materials, does problem solving emerge from student questions or current issues. Despite the curriculum being intended to develop students who “make connections between their lived experiences, mathematical concepts other subject areas, and situations outside of school” (OMC, p. 65), connection to reality is often tokenistic in schools, even when it attempts to conform to culturally responsive practices by including multiple perspectives. For example, this year, I observed a teacher giving a lesson about Canadian coins. Students were gathered facing the teacher and the carefully prepared cardstock showing a sketch of each coin. These coins were discussed in a Q & A fashion, touching on topics such as the value of the coin, the significance of the animal depicted, and why do not we have a penny anymore. A chart was completed as the lesson went along that showed different representations of the coins (i.e., decimal, fraction, and image). After the lesson, students completed a worksheet adding up the value of different configurations of coins.

I wanted to ask the students: When do you use coins? What other coins have you seen? I also reminisced to a time 40 years ago when playing the card

game, 31, for dimes might have been something you did with your family. You would have learned to count and work with coin values by participating in life. Whether you knew it or not, you were learning all kinds of mathematics, as well as practices for dealing with reality including conflict, fairness and strategy. In this case, I observed one short lesson on one day which in no way can account for a full program of instruction. As such, I am not sure of how I might have observed connection to reality in subsequent lessons. I hope I would have seen students play with coins, ask questions, make connections to coins from different countries, compare values of currency, discuss when coins are used and what it means when you have coins and when you do not. There is a plethora of ways to investigate coins that would allow students and teachers to have “emphasis on comprehensive understanding involving the whole person rather than ‘receiving’ a body of factual knowledge about the world” (Lave and Wenger, 1991, p. 33). The skills described in the curriculum to “demonstrate an understanding of the value and use of money by recognizing Canadian coins and bills” (OMC, p. 89) can be achieved in ways that allows students to embrace their life worlds and potentially develop a new understanding of it.

Lave & Wenger (1991) propose a theory of learning that challenges construing knowledge as separately concrete or abstract, as we do in mathematics education, because it doesn’t exist in the world this way. Reality for them is based on the social construction of the material world, concrete and abstract together, based on historical and cultural “interconnections” (p. 38). “Legitimate peripheral participation is proposed as a descriptor of engagement in social practice that entails learning an integral constituent” (p. 35). People, as social beings, participate in communities simply by living life—and this is what they call *situated learning*. Access to communities depends on social organization, and peripherality is “a way of gaining access to sources for understanding through growing involvement” (p. 37). Learning for Lave & Wenger is “increasing participation in communities of practice” (p.49) and the “construction of identities” (p. 53). The theory of learning presented by Lave and Wenger is an invitation to think about education without school. It is a critical perspective that questions power relations and access to learning. It can be applied in school to think about learning communities in classrooms, but it

can also be applied outside of school to think of the learning communities that exist everywhere, all the time.

My original argument was that mathematics education needs to be grounded in reality so that more diversity exists among those who identify as “math people”. Along with the hairdresser I spoke of at the beginning of this chapter, I have been fortunate to have many conversations in my travels about this topic. In Jamaica, I watched two farmers at a rural community bar measuring out a watermelon plot by taking steps across the floor. In Morocco, I met a young person who learned to play guitar in secret using YouTube and was able to “jam” old classics with my dad. In Nunatsiavut, I have been jigging for fish through the ice, out in the boat to a cabin, and out to hunt birds, and I talked with people making snowshoes and kayaks. None of these people said they were math people, but there is no way they can do what they do and not have mathematical understanding. They also have understanding beyond mathematics directly connected to what they have determined are the *strategies of action for dealing with reality*. How learning happens and discovering what is learned are questions legitimate peripheral participation and funds of knowledge can help to address. Having a better understanding of these ideas can help educators make connections between reality and mathematics which is “essential to envision and work towards a better and more sustainable future for all” (OMC, p. 42).

In this chapter, I have explored the theoretical perspectives of ethnomathematics, funds of knowledge, as well as situated learning and communities of practice to demonstrate what is gained by learning mathematics from reality. I used the Ontario Mathematics Curriculum and my experience to justify why this is an important contemporary issue. Furthermore, I have drawn attention to how people come to know mathematics and the ways they are excluded from learning. I take an ethical stance rooted in ethnomathematics of promoting diversity and sustainability. By paying attention to strategies of action to deal with reality, mathematics education has the potential to impact students in meaningful ways—ways that we need for a more peaceful and sustainable world.

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4. Alternative Assessment: Promoting Holistic Learning

Christian Aglah

Traditional assessment approaches, including standardized tests, have served as the foundation for assessing student learning for decades. Initiatives such as No Child Left Behind in the United States have underscored the importance of test scores, often leading to an excessive focus on them. However, critics argue that this emphasis does not necessarily capture students' true comprehension and deeper learning, potentially fostering detrimental teaching and learning practices (Conley, 2015).

Schools have relied on these methods as feedback on their own performance and to evaluate how their students have progressed over an academic year. Moreover, school boards and states have relied on traditional assessment to determine how well schools within their jurisdictions have performed as well as to identify challenges and potential solutions. However, standardized test was designed to assess individual student achievement and provide a snapshot of their knowledge and skills in specific subject areas. Over the years, there has been a shift towards using these tests as a tool for evaluating the effectiveness of teachers, schools, and entire education systems. Critics have argued against this development; (Kempf, 2016) suggests that such pivoting of purpose forces teachers to deliver test-oriented teaching which hampers teachers' ability to innovatively deliver their learned skills. This poses a long-term negative repercussion to the growth of both teachers and students.

Similarly, schools and districts are diverse entities with varying resources, student populations, and community contexts. There is adequate evidence that such differences have direct and indirect consequences on student outcomes (Unnever et al., 2000). Relying solely on standardized test results to evaluate the performance of schools and districts may oversimplify the complex dynamics at play within these educational institutions.

I have worked in schools where standardized testing meant two weeks of stress and pressure for teachers and students, and a misuse of resources. In a school plagued with absenteeism, truancy, and a high dropout rate, the focus was on working with students at their current levels to help ensure they adequately grasped concepts while also achieving curricula outcomes. Since our focus was on our students' genuine learning from their starting points, the standardized test results did not reflect students' actual performance. Furthermore, they added little to no value to their learning due to the fact that there is simply no way to test a student on concepts which they have never learned in the first place. Therefore, there is no point for teachers to review these tests, and, as I described earlier, conducting them is a two-week misuse of resources. These test materials cost a fortune—funds which I believe could be used to purchase other learning resources for students. This may seem extreme, but different schools have unique challenges which may not necessarily be remedied through standardized testing.

The crux of the matter is that conventional assessment approaches fall short of adequately reflecting the entirety of a student's learning and skills. Even when they do reflect skills, they have often focused on specific subjects like math and reading and have encouraged rote memorization and teaching to the test, rather than fostering the critical thinking, problem-solving, and creativity skills that are essential for success in the modern world (Giese & Alphonso, 2013).

In today's ever-evolving world, students require a diverse set of skills beyond just math and reading to succeed. Skills such as critical thinking, problem-solving, creativity, communication, collaboration, digital literacy, and adaptability are increasingly important in the 21st-century job market. However, standardized tests often do not adequately assess these essential skills. With the limitations and criticisms of traditional standardized testing in mind, I contend that alternative assessment methods should replace standardized tests. Contextually, alternative assessment can provide a more comprehensive and meaningful evaluation of student learning (Al-Mahrooqi & Denman, 2018).

Alternative assessment encompasses many evaluation techniques that differ from conventional standardized testing approaches. This method of

assessment provides students with different options to demonstrate their learning and to better reflect their skills and capabilities. The skills measured in an alternative assessment will be relevant to the 21st century world. Alternative assessment is influenced by the progressive education movement, which emphasizes student-centred learning, critical thinking, and the real-world application of knowledge (Kohn, 2000).

In the following section, I articulate what I believe alternative assessment should look like based on a progressive approach.

A Progressive Approach to Alternative Assessment

First, while progressive education emphasizes the importance of tailoring instruction to meet the individual needs and interests of students, alternative assessment methods should focus on assessing students' unique strengths, learning styles, and areas of growth. By allowing students to demonstrate their understanding through diverse assessment tasks such as projects, presentations, and portfolios, alternative assessment promotes a student-centred approach to evaluation. It should also offer students different methods to demonstrate their learning.

Second, alternative assessment should incorporate tasks that promote critical thinking, problem-solving, and analytical skills. Alternative assessments should not only assess students' knowledge but also foster the development of essential cognitive abilities that are valuable for academic success and lifelong learning (Al-Mahrooqi & Denman, 2018). Students should be presented with complex problems or scenarios that require thoughtful analysis, evaluation, communication, and collaboration. Moreover, in the process of stimulating critical thinking abilities, students should be encouraged to question assumptions, consider multiple perspectives, and make informed judgments based on evidence. All these experiences should be connected to the real world so that students are not limited to learning abstract concepts alone. Additionally, alternative assessment should measure students' social, emotional, and intellectual development. This is a shift towards evaluating not only content knowledge but also students' dispositions and capabilities (Lucas, 2021). A standardized test on mathematics for instance, will not do this justice

to students. Assessment must move beyond academic achievement to promoting creativity, problem solving, communication skills and collaboration.

Portfolios are an important alternative assessment approach. A portfolio is a purposeful collection of student work samples, reflections, and artifacts that demonstrate a student's progress, achievements, skills, and learning experiences over a period of time (Schmitz, 2018). This is in marked contrast with standardized tests, which typically involve multiple-choice questions or other predetermined formats to assess students' knowledge and skills in a uniform manner. Another difference between the two is that portfolios offer a more relaxed and authentic assessment for student learning by allowing students to demonstrate their understanding through diverse forms of expression. There is no pressure to sit and take a test, and in the event that a student is absent, their time in school will have provided enough work samples which will be sufficient to demonstrate learning. Furthermore, portfolios are more individualized and may provide evidence of student's strengths at any point in the term or school year.

The second type of alternative assessment is the Performance Based Assessment. Performance assessment is defined by Palm (2019) as an evaluation method that focuses on students' abilities to perform specific tasks or demonstrate skills in each context. This may include, but is not limited to, hands-on activities, practical tasks, and demonstrations of specific skills or competencies. This involves the application of knowledge, skills, or concepts in real-world or relevant contexts. Here, students will be required to demonstrate what they learned, and this is an effective way to discourage rote learning, which is a feature of standardized test preparation.

Conclusion

In this chapter, I have presented two approaches which are characteristic of alternative assessment. These approaches will give educators and stakeholders the foundation to develop different types of alternative assessment.

While alternative assessment promotes authenticity, critical thinking, and other valuable qualities, it is not without challenges. For instance, it could be time consuming as it requires teachers to put in a great deal of hours and

effort to achieve the desired purpose of this type of assessment. It may even require professional development, and teachers may find it challenging to change their instructional practices. However, I believe good things take time, and with regards to assessment, the effort will be worth it.

In conclusion, alternative assessment methods offer a promising avenue for more authentic and engaging evaluation of student learning. By focusing on the process and the product, these methods can provide a more comprehensive view of student abilities and progress. Like instructional planning, involving students in their own assessment process and giving them a voice in how their learning is evaluated promotes student engagement, ownership of learning, and a sense of agency in their educational journey.

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SECTION III

Social Justice in Education

Bohui (Hollie) Liu, Jimmy Kuang Yu Pai, and Sona Zendedel

What is the role of school education in our society? Many scholars and educators have long argued for schools to encourage critical thinking through involving social issues (e.g. Noddings, 2006). At the same time, schools are also well positioned for productive discussions about social justice (Parker, 2010). However, it is important to recognize the insufficiencies of simply lecturing about social issues and treating education as transmitting “bodies of information and skills that have been worked out” (Dewey, 1938, p.17). Issues of social justice need to be authentic (Gatto, 2001), yes, but classroom activities must also be facilitated in equitable ways (Akpakwu & Bua, 2014) and focus on the quality of student experiences (Dewey, 1938) that emphasize student agency (Arendt, 1958; Barwell, 2022).

In Chapter Five, Hollie Liu delves into the topic of gender equality. Specifically, she highlights gender-inclusive environments and explores considerations such as representations of gender equality in school education, challenges for implementation, as well as responsibilities and roles of schools and teachers. These considerations are consequential for preparing students to be well-rounded citizens.

In Chapter Six, Jimmy Kuang Yu Pai examines teacher actions, intentions, and decisions in a mathematics classroom. He uses own vignette where he and his students explored social justice issues, and subsequently discuss various considerations and factors.

In Chapter Seven, Sona Zendedel elaborates on the main concern of when and how students will apply their ideas and what they have learned. She expands on the importance of student agency by providing an example of a project involving eight- and nine-year-old children in Iran, where students

engaged in activities and conversations about mathematical and political aspects of sugar consumption.

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5. Beyond Boundaries: Advancing Gender Equality in Schools

Bohui (Hollie) Liu

Gender equality implies that women and men have equal status and opportunities to realize their full human rights and potential; to contribute to society in national, political, economic, and social contexts in addition to cultural development areas; and to benefit from the results of development (UNESCO, 2022). It echoed by UNICEF that gender equality as males and females (regardless of age) having the same rights, resources, opportunities, and protection (Gender equality, 2024). When it comes to education, it refers to providing all learners with equal educational opportunities (Subrahmanian, 2005), resources, protection, and benefits (UNESCO, 2022).

Even though gender equality was advocated for many years (by the Shakers before 1774 (Gender equality, 2024)) and has progressed over the last few decades, true gender equality has not been achieved (Sustainable development goals, n.d.). In the 21st century, it is still a globally acknowledged concern (United Nations Educational, Scientific and Cultural Organization [UNESCO], n.d.). Even, gender disparities are evident in progressive educational environments.

This chapter will browse the theoretical foundation of gender equality research, gender inequality in schooling, and suggestions for promoting gender equality in schools from current literature. After that, the discussion about strategies for the promotion of gender equality education will be followed. Specifically, it aims to answer the following research questions: 1) How is gender inequality represented in school education? 2) What are the responsibilities and roles of schools and teachers in gender equality in school education?

Literature Review

Theoretical Foundations of Gender Equality Research

According to Lynch (2006), the theoretical foundations of gender equality education are rooted in critical and reflexive sociological analysis, integrating the perspectives of egalitarianism, critical theory, and feminist theory. The combination of these theories challenges absolutism and traditional norms in education while promoting a shift towards more equitable and inclusive educational practices. In this context, educators, policymakers, and marginalized and excluded groups are all involved in gender equality in education.

Gender Inequality in Schooling

In contemporary schooling, gender inequality exists in many aspects of schooling.

First, gender inequality is reflected in teaching materials, such as textbooks. In some countries or regions, the stereotype of the roles of women and men in families and society still can be found in textbooks or other teaching materials. For example, Jackson and Gee's (2005) study discovered that illustrations in some of the reading materials provided in some early schools show that women's duties are usually related to housework and childcare, while men's roles tend to be social work and outdoor activities. The bias of women's roles is also found in Bursuc's (2013) research which happened in Albania and Kyrgyzstan. This study discovered that occupational descriptions in textbooks in the two countries limit women to low-paying and low-level positions.

In addition, gender inequality can also be seen in the selection of courses. Çınar (2022) shared a discovery that a large number of female students did not believe they could and should enroll in STEM courses. Their concern may be influenced by the traditional stereotypes of gender roles from students' families and society (Çınar, 2022). Having lived in such a gender-biased environment for a long time, female students become unconfident. In addition to that, because they rarely told and saw successful female role models, they do

not ensure they can excel in STEM classes. Consequently, many female students give up registering for STEM courses.

Meanwhile, some teachers are also gender-biased, which is reflected in their attitudes toward their students. To illustrate, some teachers in Albania insist that boys are smarter than girls and that girls' higher grades are only due to their hard work and diligence not due to their intelligence. In Kyrgyzstan, many teachers are stricter with girls. They believe that many activities could be only acceptable to be done by male students. Even, some teachers argue that girls should be prohibited from participating in those activities (Bursuc, 2013).

More than that, gender inequality is also reflected in classroom teaching. For instance, many teachers normally provide more attention and encouragement to male students while underestimating and devaluing female students' abilities. Besides, the way teachers interact with male and female students in classes varies as well (Masland, 2006). Additionally, some classroom teaching approaches, such as predominantly controlling classroom discourse by teachers, result in male students monopolizing a great deal of interactions, while female students are in relative obscurity.

Suggestions for Gender Equality Promotion in Schools

Current literature and research findings suggest that schools, as the core and leading force of the contemporary education system, play an important role in shaping students' values and social perceptions. Therefore, the promotion of gender equality education and the elimination of gender bias must be considered an indispensable undertaking of schools. To promote gender equality in schooling, current literature suggests the following approaches:

- Provide continuous training to teachers on the topic of gender equality (Coulter, 2003), including gender-sensitive teaching strategies (Çınar, 2022) .
- Create curricula on gender education (Aragonés-González et al., 2020) in schools.
- Ensure there are no gender-biased messages in all teaching materials and curricular content (Subrahmanian, 2005).

- Schools and teachers should cooperate to create gender-equitable learning environments and cultures.

Discussion

The purpose of gender equality in education is to eliminate gender discrimination, promote equal participation, fulfill all learners' achievements in education, and create an educational environment with less gender-conscious bias (Subrahmanian, 2005). From the point of individual development, gender equality education favours the academic and future professional development of individuals, especially females. At the social level, it contributes to the creation of a more harmonious, inclusive, and equitable social system.

Gender Inequality in Schooling

Even though school education should provide equal opportunities for all students in various aspects, gender inequality can still be observed in textbooks, curriculum selections, teachers' attitudes, and classroom teaching. This indicates that there is a gap between the theoretical pursuit of gender equality in schools and the reality of practice. The reality of schooling not only perpetuates and reinforces traditional stereotypes of gender roles but may also inadvertently limit students' exploration of non-gender awareness.

Gender Stereotypes in Teaching Materials

The impact of gender inequality in teaching materials on students is reflected in various aspects. First, gender-stereotyped teaching content reinforces social expectations of gender roles, which may lead students to accept the definition of the restricted roles of genders. For example, male heroism is to be praised and pursued and women's value is reflected in taking care of their families (Jackson & Gee, 2005). This may result in restricted options for students in terms of self-exploration and career aspirations. To illustrate, when female students find textbooks in which women's roles are always limited to low-paying or low-status occupations, they may not realize that there are other social contributions that women can make, or that they may

not have the information to challenge jobs or disciplines that are often seen as male domains, such as science and technology.

Moreover, such bias may also sow seeds of self-doubt in the minds of female students, which may affect their participation and performance in academic learning and school activities. In the long run, students' behaviours and negative emotions will be trapped in a vicious cycle and will interact with each other. Ultimately, it will affect the female students' mental health and self-efficacy.

What's more, gender-inequitable teaching materials may also have an impact on teachers. Teachers may be misled by textbooks perceived as authoritative and unintentionally accept the stereotype of gender roles. Besides, teachers who already have stereotypical perceptions of gender roles may become more certain of the existing stereotypes because of the textbook's added power. Deepening the stereotypes of teachers will impact their students, thus further exacerbating the spread of unequal awareness between genders. Such unequal teaching practices may have far-reaching consequences among students, limiting women's learning opportunities and future development.

Course Selection and Gender Roles

Gender inequality in curricular selection, such as in STEM, leads to several consequences. The first one is that gender inequality in curriculum selection may not only reinforce the differences in the expectations of different gender roles but also result in more pronounced gender distinctions in educational and career choices. Normally, female students are encouraged or expected to pursue care-related work, while males are more often directed toward scientific and technical fields (Jackson & Gee, 2005). This segmentation may undermine female students' confidence in their ability to achieve success and may lead male and female students in more separate directions in their future educational and career paths. In this way, gender segmentation in education will be continually self-reinforcing and be reproduced and enhanced in students' career development.

Secondly, such disparities may contribute to a reduction in gender diversity in curricular-related areas, which is not conducive to promoting

innovation in this field. Lack of female participation will likely limit the potential for innovation in the course-related fields, it may be due to the shortage of exploration of female perspectives. Therefore, restrictions on women's choices of courses may affect their career development and earning potential while diminishing the development potential of those industries.

Furthermore, the limited involvement of female students in some courses may result in a lack of female specialists in these fields. This means that there may be few successful female role models in these areas (Çınar, 2022), which may undermine the self-confidence of young women to believe they could be experts in the future in those fields. Over time, this gender bias in course selection may exacerbate the shortage of gender diversity in these fields. Ultimately, this will not be beneficial to the goal of creating an equal and inclusive society based on people's competence rather than gender preconceptions.

Teachers' Gender Bias

When teachers believe that male students are smarter than female students and treat males and females differently, female students may gradually be brainwashed and accept this view. Over time, they may not believe they can perform as excellent as males even if they have the potential and ability to achieve high grades. This will not only destroy their self-esteem and self-efficacy but may prevent them from pursuing higher academic and professional goals.

Teachers' tendency to focus more on male students and provide more encouragement in the classes while underestimating female learners' abilities may result in male students dominating academic conversations while female students remain relatively invisible. This may solidify gender bias in the minds of students and may contribute to the low classroom participation rate of female students. This would likely affect female students' learning experience and knowledge acquisition, and eventually impact their academic performance.

Promotion Strategies for Gender Equality in Schools

Training teachers is essential in the promotion of gender equality in schooling. First, it may help to develop their awareness of the value of gender equality in education, correct any gender bias they may have, and enable them to be sensitive to gender topics in their teaching. Besides, training may allow teachers aware of the necessity of using non-discriminatory language, the provision of equitable educational resources and opportunities for class contribution, the adoption of equal assessment criteria (Subrahmanian, 2005), and the employment of gender-neutral teaching methods.

Through specialized training, teachers may be introduced to various approaches to achieve gender equality in their classroom teaching. For example, they may learn how to promote students' holistic understanding of the value of gender equality by using a variety of teaching methods, such as group discussion (Aarfin, 2023), project-based learning (Çınar, 2022), and critical thinking exercises (Pavlenko, n.d.). Moreover, they may be introduced to encourage students to work together across genders (Çınar, 2022), provide diverse learning resources and activities to meet the demands of students of different genders, and employ gender-neutral teaching methods.

Even though training should be provided by schools regularly, teachers are also suggested to take the initiative to learn about gender-equality-education-related knowledge, including teaching strategies in classroom education. Meanwhile, regular assessments, like surveys, are recommended to push teachers to keep learning about promoting gender equality in teaching and become sophisticated in this field.

In addition to this, incorporating gender equality education into the curriculum may help to enhance students' understanding of equal rights and eliminate gender stereotypes. Such programs aim to enable students to learn about the history of gender bias and to understand that it is not a natural phenomenon but a historical product of social and cultural development. They have the right to challenge and change the fixed understanding and division of genders in society.

Moreover, such education on gender equality should start at an early stage of students' education to guide the students towards an equal worldview. In these programs, students should be encouraged to think critically about

gender-related knowledge and practices. At the same time, schools and teachers should provide them with the tools, such as open discussion, role-playing, relative readings, and so forth, to challenge existing gender norms.

Such curricula will likely promote harmonious and respectful communication on and off campus and lay the foundation for a community free of gender bias. By raising students' awareness of gender equality through education, future generations can more effectively promote gender equality in society and create a more equal world. Therefore, the curriculum of gender equality is like an investment in the development of responsible citizens for society.

Importantly, the teaching materials used in schools must not contain information that reveals gender inequality. As a first step, schools should conduct a thorough review of existing teaching materials to identify and eliminate content that may reflect or reinforce gender bias. This includes removing images and language that depict stereotypical gender roles and support ideas of gender inequality. Next, schools should propose that teaching materials be compiled with concern for the presentation of equality and diversity of males and females in various occupational and social roles.

To ensure there is no gender bias in all teaching materials, schools are advised to cooperate with teachers and students' families. For example, teachers and parents of students who discover gender bias in teaching materials can respond to the department responsible for the materials and request to change the content through school leaders. Moreover, schools can provide platforms for students' families and teachers to communicate with each other to discuss their views and suggestions on teaching materials. This will not only help to identify gender bias in the materials but will also enable the schools and teachers to build a good relationship with students' families. Ultimately, they can get the help of the students' families to introduce gender equality to students.

Last but not least, a school environment that promotes gender equality and allows for safe discussion is the ground for the realization of the above strategies. First, schools should establish gender equality policies and make clear statements against any form of gender discrimination. These policies must

be implemented in the daily operations of the schools to ensure that all students and staff understand the importance of gender equality. Meanwhile, schools should provide platforms where students are allowed to discuss gender-related issues and experiences. This can be achieved through student clubs, seminars, and regular gender equality events. In these spaces, students should be encouraged to express themselves freely and discuss what gender equality means to them personally and to society. Also, this space is a place for female students to share their successful experiences to encourage other female learners to challenge stereotypes and boost their self-confidence. Certainly, collaboration with families and communities is also indispensable. Through collaboration, gender equality can be extended from students' homes to their schools while being promoted in communities. In this context, students will learn about gender equality implicitly in their lives and school learning, and gender equality is possible to attain broader promotion.

Conclusion

This chapter provides an in-depth analysis of the theoretical foundations of gender equality in education and the inequality that exists in school education and proposes strategies to promote gender equality in schools. Although theoretical schooling emphasizes the significance of gender equality, gender inequality is still evident in actual schooling. Gender stereotypes in teaching materials, gender bias in curriculum selection, and gender discrimination in teachers' attitudes and teaching methods undermine schools' efforts to achieve gender equality.

These inequalities must be addressed through a variety of strategies, such as providing continuous training for teachers on gender equality, developing curricula that include gender education, ensuring that the content of teaching materials and curricula does not contain gender-biased messages, and creating gender-responsive school environments. These strategies need to be supported by education policymakers and work in partnership with students' families and communities to ensure that the values of gender equality are embedded at all levels of schooling.

Ultimately, gender equality in schooling is beneficial to provide

students with a learning environment that is free of gender bias and allows students to pursue their goals without gender constraints. In such an environment, students are recognized for their potential and achievements, which not only promotes their development but also lays the foundation for a more equal and inclusive society.

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6. Teacher Moves for Exploring Social Justice: One Branch Among Infinities in a Mathematics Classroom

Jimmy Kuang Yu Pai

We are on fire: forest fires are increasingly common globally (Tyukavina et al., 2022); Aaron Bushnell died from setting himself on fire in protest of Israel’s war on Gaza (Geoghegan et al., 2024); and conflicts, violence, and extremism are on the rise (United Nations, n.d.). As the world literally and metaphorically burns from climate and humanitarian crises, mathematics education can – and *should* – play an important role in confronting these challenges (Skovsmose, 1994).

Perceptions and enactments of mathematics and mathematics education have been complicit in creating, perpetuating, and justifying systemic inequities as well as harmful interpretations relating to environmental concerns (Criado-Perez, 2019; Ginzburg et al., 2007; Muhammad, 2014; O’Neil, 2016). Many have recognized the opportunities and responsibilities of mathematics education, and there have been ongoing efforts in the fields of mathematics education to examine and reimagine interrelated aspects of the contents of mathematical activities (Berry et al., 2020; Stocker, 2017), teachers’ pedagogical practices (Andersson & Barwell, 2021; Goffney et al., 2018), and relational processes of teaching and learning together (Chen & Horn, 2022).

While related literature is continuing to become more robust, “much of this work is theoretical in nature” (Andersson & Barwell, 2021, p.4), and preservice teachers do not feel prepared to teach controversial issues (Ersoy, 2010; Woolley, 2011). As a classroom teacher, I have often questioned what it means to be teaching mathematics for social justice or teaching social justice through mathematics.

In this chapter, I discuss my teacher actions, intentions, and decisions through the backdrop of a class that I taught in a non-semester school in Ontario, Canada in the 2021-2022 school year. I begin with a vignette from this Grade 12 data management course, in which students and I endeavoured to explore, understand, and respond to social injustices. I then unpack my intentions and decisions through this one branch of possible infinities.

Transfiguring from Figurines: A Vignette

As the school bell yelled at us to start class, I stepped away from a conversation with two students about how their weekends involved caring for their younger siblings while their parents were working. They knew that throughout high school I lived alone with my younger brother, and so we were reflecting together on the emotional responsibility of caring for another human being while navigating adolescence.

“Alright, let’s get started,” I said as I gestured for the students to come in for a huddle. Halfway through the course, this was part of a familiar and comfortable routine which always helped students lift themselves from being sedimented into their seats after a long Monday. I took out two Lego figurines that I had borrowed from a student in this class. One figurine had the standard square body with a bald yellow head, and the other was a seemingly female figurine from Lego Friends (Milmo, 2012) with a slimmer torso.

“What do you notice and wonder?” Before I even asked, I could tell that students were already thinking. As students shared their observations and curiosities out loud, I scribed on one of the whiteboards close by. As Grade 12 students in my room who got used to a practice of noticing beyond what is in front of them and posing questions that point at our society, they began to comment past price and weight. Topics that emerged included plastic waste, gender stereotypes and expectations, as well as the exploitation of factory workers.

“What questions are you thinking the most about now?” After affirming each thought and question as legitimately interesting paths of explorations, I recorded some informal votes. We decided to focus on gender stereotypes by starting with whether the cost per piece was the same for Lego Friends

compared to the regular Lego set. I held out a shuffled deck of cards, and students grabbed them to find their group members for the day. The groups arrived at their stations, each of which had a vertical writing surface (i.e., a whiteboard or blackboard) with markers or chalk, and many groups continued to discuss gender stereotypes associated with colour and with toys. As they discussed, they also retrieved information and subsequently created a table of values involving price, number of pieces in particular sets, and so on.

Students investigated trends, set up regression analyses, and saw, for example, that the Lego Friends set was more expensive per piece. Throughout the class, I attended each group's conversations involving both the technical aspects of their analyses as well as the human aspects that point toward our society. Occasionally, I shared my own stories and concerns for my young children. I also shared the commission on gender stereotypes in early childhood from The Fawcett Society (2019a) which found that 61% of parents agree that marketing reinforces stereotypes about what girls and boys can do. Furthermore, students were nudged to analyze the full survey data (Fawcett Society, 2019b) using techniques from the course.

During the last 15 minutes of class, I debriefed by building a narrative from student experiences, student insights on gender issues, and students' mathematical strategies for navigating available data. We revisited the idea that the "existence, collection, compilation, and dissemination [of data] is a consequence of resource allocation, of choices made by individuals and institutions on what to measure and why" (Muhammad, 2014, p. xu). Except this time, we had an example of mathematics weaponized toward positive influences on our society: mathematics for justice. I thanked the students for sharing their thoughts, stories, and questions with me as the school bell belligerently screamed at us to go home.

More Than Lesson Plans and Intentions

Teaching is far more than lesson plans and good intentions. In many ways, my focus in classrooms is about creating and maintaining conditions that support students being in flow (Csíkszentmihályi, 1990): that is, an enjoyable state of concentration where nothing else matters—an "optimal

experience...that we *make* happen” (p.3). My focus is on students having, and contributing to, positive experiences in our shared space. This can involve my actions in providing prompts and extensions to vary the challenges and abilities in a group as students think and do mathematics with each other (Liljedahl, 2021).

As I intertwine issues of justice into my classroom, I am also paying attention to how students are navigating potentially sensitive topics and steering them in productive directions when necessary (Pace, 2019). For example, while the class in the vignette was not structured explicitly as a debate or deliberation (Felton et al., 2009; Lo & McAvoy, 2023), there were moments where students’ subconscious and temporary goals aligned more with debate (i.e., winning an argument) or more with deliberation (i.e., reconciling perspectives). While I have explicitly stated that our goals are for fostering deliberation rather than dispute (Smith, 2017), it was important that I negotiate these tensions in-the-moment, as well as limit potentially unfounded harmful “opinions that explicitly targets the...vulnerable in society in order to sustain unequal power” (Torres & Ferry, 2019, p.31).

One student shared the sentiment that the figurines are simply reflective of what boys and girls enjoy, and his group members began to challenge him on gendered expectations. Upon hearing raised and overlapping voices, I joined the group and listened more carefully. While my mere physical presence lowered the temperature of the conversation, I also drew connections across the seemingly dichotomous sides: that perhaps it is a messy process where we find ourselves within a society riddled with varied motivations and histories. My words acknowledged the student’s suggestion about preference while also connected to his colleagues’ concerns about gender and invited him to empathize with navigating undue societal pressure using language like “we” and “ourselves.”

World Within Worlds: Nested Ecosystems

The moments shared in the vignette become more coherent when viewed as being embedded in, and interacting with, nested complex ecosystems (Davis & Francis, 2023) across time and space. These imply that my

considerations as a teacher involve individual lived experiences and my intentions; histories which students and I shared with each other within and outside the mathematics course; as well as societal structures relating to language, identity, and power.

Many have recommended teacher care in ways that first acknowledge and learn about students' lived experiences (Chen, 2023; Noddings, 2012) before making decisions grounded in experience, relationship, and curriculum (Berry et al., 2020; Joseph & Alston, 2018). Looking back at my experience, my decisions in planning for social justice conversations align with four principles¹ from Maxwell and colleagues (2023), and my decisions relating to mathematics learning can be understood through the three groups of principles² from Barwell and Hauge (2021). This lesson was grounded in student interest that I noticed through casual conversations during previous classes, aligned with mathematical learnings that involve working with data, and involved real data that students sought after discussions led to the usefulness of data. In facilitating discussions, I leaned on strategies such as the five practices for orchestrating productive mathematics discussions (Smith & Stein, 2018) reoriented toward social justice discourse (Berry et al., 2020). These involve anticipating (i.e., planning for likely views, questions, and disputes); monitoring (i.e., in-the-moment intervening grounded in the topic); selecting (i.e., intentionally uplifting voices); sequencing (i.e., creating narratives during debrief); and connecting (i.e., bridging similarities and differences).

This lesson was also directly related to the histories which students and I shared with each other within and outside of the Grade 12 course. Moreover, this lesson only represented one step in a journey toward exploring social justice together as a class. My decisions for the selection, timing, and framing of this

¹ The four principles that Maxwell and colleagues (2023) suggest for teaching and talking about controversial issues are curricular alignment (adopt clearly justifiable approaches), impartiality (avoid using authority to promote views), avoidance of foreseeably inflammatory content (avoid foreseeable significant disturbance), and age appropriateness (adopt content, approach, and language that are appropriate).

² The three groups of principles that Barwell and Hauge (2021) suggest for teaching mathematics in the context of climate change involve forms of authenticity (real data that are relevant and discussions centre on student discussion), forms of participation (student participation in mathematics, in classrooms, and in communities), and reflecting on and with mathematics (student considerations for the utility, limits, roles of values, and uncertainty of mathematics).

lesson aligned with Pace's (2019) recommendation that teachers might begin with "less contentious issues that did not hit close to home and build up to those more deeply felt" (p.249). Several of the students in the classroom have had interactions with me through the Black Excellence Club and the Feminism Club that I supervised. This meant that there were additional aspects of my attention to building a safe, brave, and accountable space in the classroom—an environment crucial for working with social justice (Ho et al., 2017). In addition to my interactions with some students outside of the classroom, I also drew on shared histories and experiences within the classroom during conversations.

Student conversations during the lesson are also inevitably connected to the happenings and structures of grander systems such as institutions, cultures, and the more-than-human world. For instance, some of the students were involved in a school awareness campaign on the National Day of Remembrance and Action on Violence Against Women (Women and Gender Equality Canada, 2023), and so their conversations related to the 1989 École Polytechnique massacre as examples of how beliefs about gender can bring palpable harm. One group wondered whether Lego ever had a female CEO and found out that they did not. Another group discussed how Lego Friends enjoyed commercial success in 2012 despite criticisms (Milmo, 2012) and how this is indicative of the ways in which society views gender. As I paid attention to their thinking, I encouraged them to seek and evaluate relevant resources, as well as situating data and data analyses in the contexts of our world.

Embracing Infinities

The vignette and subsequent discussions in this chapter concern one implementation of a lesson involving Lego that was oriented toward an exploration regarding gender issues. It is important to note that many details differ significantly from a series of Grade 9 activities I previously facilitated (Pai, 2015). The existence of differences is necessitated by my considerations for curricular goals, student experiences, student dynamics, and events that unfold in our world. Even if situated within the same course and with the same students and teacher, the classroom activities would have unfolded differently depending on various factors. These factors may include timing of when this activity took place during the year; the exploration of a different emergent

question (e.g., plastic waste); stronger student emotions in denying gendered expectations; or the times and ways in which I attended to group conversations. Each possibility involves different contingencies that require nuanced differences in how teachers may facilitate discussions.

Learning, learning of mathematics, and learning involving social justice are co-emergent alongside countless factors of influence, and they exist only in the happening as worlds are continuously brought forth through actions (Varela et al., 2016). Since outcomes are neither guaranteed nor predetermined, it is important that we see lesson plans and intentions as contributing to possibilities instead of to finalities. Barwell and Hauge (2021) advocated the importance for students to reflect on the uncertainties of mathematics. Similarly for teachers, teacher educators, and researchers, our considerations for teaching social justice benefit deeply from exploring each implication within infinities.

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7. Students' Agency in Mathematics Classes

Sona Zendedel

If social justice includes access to quality education, mathematics education requires specific attention. For me, understanding and identifying the formatting power of mathematics and providing students with opportunities to exercise their agency in mathematics classes are significant parts of quality mathematics education and social justice.

Conceptual Framework

How we think about the nature of mathematics is complicated. It is possible to consider it a certain absolute truth that is far removed from any social interests or shaped by human interaction with the animate and inanimate alike. As Ernest (2018a) explained, it is a disputed issue with opposite answers based on the different origins of mathematics philosophy. Indeed, "social constructivist philosophers of mathematics argue that mathematics is fundamentally social, with cultural limitations to its claims of certainty, universality and absoluteness, and is as much subject to conceptual revolutions as is science" (p. 17). What school mathematics should be and how it could be applied is controversial, especially if we dream of a democratic society.

Ernest (2018b) recommended including the philosophy and ethics of mathematics in the school math curriculum, as well as at the university level, to avoid harm caused by mathematics in applying it to social issues, humanity, and our ecosystem (p. 191). Epistemologically, interobjectivity signifies the integration of the observer, phenomena observed, and observation (Davis, 2004, p. 101), and it considers ethical issues in a broader range. It is crucial to be sensitive in the context of our actions toward humans and non-humans, so with each "can we...?" we must consider a "should we...?" as well (p. 201). Abtahi (2022) explained why empathy must be at the heart of each mathematics-related

activity, which is consistent with considering a "should we..." with each "can we..." to see the probable harmful aftereffects of each mathematical solution and result. Although there is uncertainty in human decision-making, looking at humankind as "selves in relations" (Barwell, 2023, p.6) and discussing the probable future would be helpful in reflecting, reviewing, and re-deciding to care about our ecosystem.

Establishing a democratic society has its philosophical foundation and necessities; the education system, specifically mathematics education, is no exception. Critical Mathematics Education (CME), with its philosophy, concerns and hopes, provides an opportunity for our shared future. As Skovsmose (2023a) posited, whatever takes place in the class, such as students' status, exploitation in the globalized world, racism and colonization, social justice, environmental issues, and mathematics itself, are the main concerns of CME. Furthermore, multiple dimensions of peace, including inner, social, environmental, and military peace, are essential in mathematical practices and research (D'Ambrosio, 2010). Therefore, it seems that CME fits the critical democratic framework.

Education is a political issue, so mathematics education is political as well. But if we consider mathematics a particular discourse, it is necessary to look at its formatting power. The formatting power of mathematics is not easily visible in shaping and controlling crises (Skovsmose, 2023b), illustrating that it is an essential part of CME.

Mathematical Activities

For mathematical activities in the classroom, three sets of principles have been proposed (Barwell, 2022). First, the term forms of authenticity refers to the necessity of engaging students with complex problems related to their own lives, providing the opportunity to work with real data to expand their ideas with a meaningful discussion. Second, forms of participation describes the experience of participating in mathematics, not as a passive consumer, but as a creator and user of mathematics in all aspects of social life. The third principle, reflecting on and with mathematics, focuses on the reflective discourse of mathematics to see the limits and formatting power in creating our world.

Power Relations in the Mathematics Classroom

Assuming that the main concern is when and how students will apply their ideas and what they have learned, it is crucial to bring learning into action. Gresalfi et al. (2009) consider classroom activity as a social organization with competencies such as agency and accountability. They contend that social organizations "are not defined by one member, no matter how powerful that member may be" (p. 52); how individuals practice and participate in joint action shapes it. It seems power relations should be different in such a classroom. For Arendt (2006a), having the company of others in a shared public space to freely meet and insert themselves by word and deed (p. 147) is the space for political life. The concept of freedom in Arendt's works is interweaved with the notion of equality (2006b, pp. 21-22), which resonates with fair power relations and the field of experiencing freedom is action (2006a, p.145). With each new action, a new story will emerge in the existing web of human relationships (Arendt, 1958, p.184). She argues that faith and hope in human affairs arise from the fact that each human is unique (p. 178) and capable of new initiatives. Breaking the chains of events set in motion by previous actions or putting them on a new path in public would be possible by coming together in plurality (p. 143). When a group of 25 children and young adults sued the Colombian government in January 2018 because of the high rate of deforestation (Pinto-Bazurco, 2018), it was hard to believe their success. "Fridays For Future¹," as a youth-led global organization, is another example of a new path in public. Both of these projects have shaped outside schools *by* youth. Although the role of the teacher cannot be ignored when doing research with students at school, it is possible to minimize it to provide a context for students' agency while respecting their freedom.

Formatting Power of Mathematics and Students' Agency in a Mathematics Classroom

In this section, I summarize a project² done *with* eight- and nine-year-old children in Iran during a school year in an alternative education system. The

¹ <https://fridaysforfuture.org/>

² The complete report of the project has been published in Persian.

main idea for this project was inspired from a fact which was presented during a weekly teachers' meeting: High consumption of sugary substances and improper nutrition cause obesity and chronic illnesses such as diabetes, cardiovascular diseases, and kidney diseases. Decreasing, on average, ten percent of our daily white sugar usage could change the condition.

The project started with a question: "How much sugar do you consume in your daily diet?" To find the answer, we took notes of all the sweet things we ate per day for a few weeks. But how much sugar is in a small bowl of jam, a piece of cake or a glass of Coke? Many calculations have been done to estimate the sugar content per serving in home-made, semi home-made and commercial sweet foods. Alongside these calculations, we asked specialists to present how much sugar our body needs and what the different carbohydrates like glucose, sucrose, fructose, starch, and fibre are. We received help from the Iranian Diabetes Association as well as from parents and children with diabetes who announced their readiness to enter a conversation with us regarding the influential factors in getting this disease and its consequences. Furthermore, brain, heart and kidney specialists and a dentist introduced us to chronic nutrition-related diseases.

Another component of the project involved exploring how we might enjoy a healthy life by considering our favourite foods and drinks and our bodies' needs in our daily diet. Then, we searched to see if all of the sugar in these foods and drinks was produced in Iran. We gathered a vast quantity of packages and wrappers, which included the food nutrition tables and ingredients lists, from various commercial snacks. We washed all of the packages and laminated them for comparison. After categorizing them, we illustrated the amount of sugar in for each snack in pie graphs. We used tiny plastic bags and sugar to make sense of and visualize our body's needs and consumed one. But what were those moments that illustrated the formatting power of mathematics and political aspects?

- Our calculation showed that Coke is a sugary product with no nutritional value and which has a high consumption per capita in Iran. Its price is high compared to the cost, and it is considered profitable. Strangely, we discovered that a portion of the profits of the soft drink factories was paid to the Ministry of Health for the supply of medicines

and for the treatment of related diseases. Do we create a disease to cure—a topic that seems more like humour than reality?

- We found in the news that our nationally produced sugar was more expensive than the sugar produced in other countries in the Persian Gulf because of the wear and tear of sugar factory equipment inside Iran. Is it profitable to produce domestic sugar? Is it not better to buy sugar in the Persian Gulf at a lower price? These questions opened a controversial discussion in the class. After a few sessions, new questions were raised: In the event that we close domestic factories, what is our plan for the labourers who work in those factories? Do we have any plans for the probable sugar price increases in the next few years? Through consulting an economist, we became familiar with the concept of investment. So, the problem changed; instead of focusing on whether to close factories, how to invest in economic infrastructure became the topic of the children's discussion. In a documentary movie, we saw the difficulty of working in sugar factories. The poverty of the workers and the factory owners' profits were noticed. "What is the resolution?" stayed an open issue until the end of the project. In addition to this, a new class discussion involved the waste of sugar factories, which is turned into medium-density fibreboard (MDF) in other countries but is an environmental pollutant that has caused severe challenges to the ecosystem.
- Sour snacks are a popular snack in Iran which contains sugar. Children noticed an estimated error on the package when working on nutrition facts. The mentioned weight was eight grams plus/minus half a gram. When they heard the explanation, they decided to see which number of sour snacks inside the package was more than eight grams and which number was less than eight grams. In a package of 100, the majority of sour snacks weighed less than eight grams. Should this small amount of error be significant? After long calculations, they considered it meaningful at the mass production level.
- In some cases, an unclear nutrition fact table that just mentioned the amount of total amount of carbohydrates was a source of confusion. Consumers' right to access the clarified nutrition information was their

demand.

At first, all topics were discussed in the classroom; little by little, parents were engaged, and then the topic was extended to other classes. Students considered themselves the project's owner and wanted to take action. However, for me, the students' agency started with their decision to write a letter to the factory managers asking them to consider the consumers' rights. For writing and sending mail, they requested their Literature teacher's help. When they learned the proper format of a letter, they started writing to the Ministry of Health. They just received one response. They thought: "It is not the solution!" and they began to share their research findings everywhere. Parents and other teachers' support helped them to be more confident, but in sharing with other people, they were confronted with questions such as: "Who are you?", "What is your organization?" and "How did you find this information?". So, establishing an association to advocate for a healthy lifestyle was the next stage. They designed their own logo and member cards, and ultimately, their association presented the project in seminars in Tehran. Convincing the seminar leaders to allocate time for their presentation was done entirely by the students.

During break time, they sometimes began talking to people in each corner. Time limitations in talking to people were the reason they began writing the reports to share as a catalogue at conferences and seminars. They involved parents and other teachers to plan for an actual student presentation. Despite all the difficulties, the students finally presented the project to many audiences in Tehran.

Conclusion

The project started by arousing children's curiosity about daily sugar consumption. All data we used was real, and everybody partook in data collection. Reflecting on our mathematical answers and findings helped us understand and criticize the issues. Meeting experts in different fields helped them learn how to arrange questions beforehand, manage time, and engage in respectful discussions during the visits. When they considered themselves to be the project's owners, my role as a teacher was largely downplayed and sometimes completely ignored. Although it was not easy to listen carefully to

endless daily discussions, how we practiced and improved respecting each other in all disagreements and with different attitudes was rewarding.

If I think of *selves in relations*, if I believe in *freedom* in Arendt's (2006b) terminology, if I want to show *the formatting power of mathematics* to participants, if I dream of students' agency in mathematics classes, it is crucial to give up the power that being a teacher gives me. Doing so is not easy for me; but "no one could be called either happy or free without participating, and having share, in public power" (Arendt, 2006b, p.247).

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SECTION IV

Digital Technologies in Education

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Digital technologies have been increasingly incorporated into various aspects of daily life. In many countries, it has become ubiquitous. For instance, social media has permeated modern society (Li et al., 2020), and in 2023, we saw the generative artificial intelligence (GenAI) boom. With the prevalence of social media and GenAI, it has become increasingly crucial for users to develop the knowledge and skills necessary to use these technologies effectively. In educational contexts, social media and GenAI have already made their way into becoming the focus of curricular, assessment, as well as teaching and learning discourses. Stemming from such discourses, it is also important not to ignore the clear ways in which digital technologies can be misused.

This section will include three chapters which explore a few of the contemporary issues around technology use in education. In Chapter Eight, Anushka Sajani Karunaweera focuses on accessibility and the ongoing debate on GenAI and its implications on schooling as a site to foster human knowing. This chapter provides evidence-based suggestions on how schools could use GenAI as a tool to facilitate accessibility based on the major argument that accessibility requires a reciprocal interaction between tool and user. In Chapter Nine, Frank M Ventrella investigates the role of the digital divide and media literacy education in the countering of online misinformation and fake news. In Chapter 10, Masoumeh Rahimpanah explores the potential for fostering critical thinking through the analysis of social media propaganda.

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8. Access Ability in the Age of AI: Is it Really Man vs. Machine?

Anushka Sajani Karunaweera

What emotions emerge when thinking of artificial intelligence (AI) and its expanding stake on the many aspects of our personal and professional lives? As an emerging educational scholar, AI brings fear: fear of the unknown, fear of misuse, misinformation, and what lies ahead in terms of the ethics and integrity of teaching and learning. When reading this chapter, I encourage you to reflect on your own emotions as a means to deeply consider what AI represents in relation to your life and what it seems to be threatening.

In 2016, Stephen Hawking was famously quoted in *The Guardian* as he warned the public that AI will either be the best or the worst thing to ever happen to humanity. The exponential increase in the use of Generative Artificial Intelligence (GenAI) such as ChatGPT has exceeded the expectations of the developers of the programs themselves (İpek et al., 2023). It makes it astonishing to believe that ChatGPT was launched only 15 months ago, with *The Washington Post* reporting an estimated 100 million users in its first two months after its launch. Academic communities that support GenAI comment on its capacity to promote accessibility of materials and content (Alasadi & Baiz, 2023; Feuerriege et al., 2024; Glazko et al., 2023; Goel, 2020). For example, Alasadi and Baiz (2023) argue that in a classroom setting, AI-driven systems can analyze individual student needs, strengths, and weaknesses, to provide course-material that is tailored for a personalized learning experience.

If this were the case, there seems to be a misalignment with how educational institutions are responding to the use of GenAI by students. Liu et al. (2023) report that some universities have implemented bans on the use of ChatGPT. Alasadi and Baiz (2023) justify the bans as an attempt to preserve academic integrity, with punishments potentially leading to expulsion. The major concern with GenAI systems seems to be the misuse of it, relating to

issues of plagiarism. However, what are we really trying to preserve? In educational systems that rewarded and operationalized human knowing through formulaic product-oriented outcomes, GenAI seems to be the key to the input-output transaction of learning. Well, now students have the key. Now what? We can ban the entire system, scare them with threats of plagiarism and cheating, and label their works as a challenge to academic integrity. But in the end, who is really at fault? As educators, why are we so afraid? Think about it... In curricular systems that were built on measuring what is measurable and valuing the products of learning, we may speak on academic integrity, when in parallel we may have also devalued the very integrity of *human* knowing.

The issue this chapter will focus on is how accessibility can be considered in the use of GenAI. I will not be focusing on the accessibility features of GenAI platforms, nor will these platforms be glorified as a standalone fix for accessibility concerns. Rather, the issue will be discussed by prioritizing the importance of the human-AI collaboration, specifically in terms of how *we* can make these platforms accessible for us and our students. The next section provides an overview of GenAI and leads to the two major themes this chapter will focus on: human knowing and the conceptualizations of accessibility as a means to access the capacity for human knowing.

Generative Artificial Intelligence (GenAI)

Although GenAI platforms such as ChatGPT are newly popularized, the use of GenAI dates back to the 1960s with MIT professor Joseph Weizenbaum's development of chatbot ELIZA (Liu et al., 2023). GenAI is designed based on the theoretical frameworks of natural language processing (NLP) and machine learning in that it can autonomously generate data-driven content such as text, audio, video, and images in response to instructions or prompts entered by the user. Weizenbaum's chatbot was categorized by Liu et al. (2023) as one of the earliest occurrences of NLP, with the purpose of simulating human conversation based on the type of text it received. Weizenbaum's ELIZA was a rule-based system designed to mimic conversation at a basic level; however, it provided a foundation for later work and advancements of NLP which laid the groundwork for large language models (LLMs) used in GenAI systems today. The recent advancements in

LLMs have improved systems with its increased availability of training data at a reduced computing cost, which in turn led to the commercialization of GenAI and its subsequent integration into multiple industries (Fui-Hoon et al., 2023). With this integration, GenAI systems have embedded itself into human life in various capacities. To explore the relationship of human-AI collaboration, the next section will discuss how human knowing is understood, how it relates to AI and its implications for schooling.

Human Knowing

McDermott (1998) defines knowledge as a part of experience, with all other input being information. Although dated, the author contextualizes human systems of knowledge within the recent developments of information technology (IT) in terms of the internet and electronic mail, and how IT systems cannot, by itself, mobilize knowledge and promote collaboration. A key issue the author highlights is how the typical focus of information systems is the identification of information, organization, and determining access to this information. However, “if a group of people don’t already share knowledge, don’t already have plenty of contact, don’t already understand what insights and information will be useful to each other, information technology is not likely to create it” (p. 2).

Knowledge is understood through the involvement of the knower. We can consider bookshelves in a library as an example. Each bookshelf may hold books and periodicals containing a multiplicity of information; however, one cannot posit the bookshelf as being knowledgeable. McDermott (1998) calls the human mind a biochemical library, but the fundamental difference between information and knowledge is that knowledge requires the ability to use information in context, which the author argues computers cannot do. They use the example of knowing a city. To know a city is to know its sites and streets to fit different purposes. Google Maps has the ability to provide you with the fastest route to your intended destination using real-time traffic data. Although when recommending a site to a loved one, you will not only be referring to the fastest route but perhaps the most scenic one based on memory—an outlet mall with great bargains on the way or a restaurant to avoid that had glowing online reviews but gave you and your family food poisoning. The knowledge refers

not only to the information but also to the use of the information in a reflective and personal way.

Specifically considering how GenAI processes information in relation to human knowledge systems, algorithms designed for machine learning excel at data processing and analysis (Brühl, 2024). Systems such as ChatGPT can identify patterns based on statistical relationships of the data that is fed into the system to generate content. According to Brühl's (2024) article on the foundations of GenAI, such machine learning models solely rely on the training data they receive, and contrary to human knowledge, they struggle with unexpected or new prompts where there is a lack of adequate data. How this differs from human knowing is that humans are able to generalize stored information to new or unusual contexts in order to make sense of new situations by using prior and existing knowledge (Barros et al., 2023). Knowledge systems differ from information systems in that it leverages existing information to adapt to novel scenarios even with no presence of training data for that specific scenario.

These ideas are reflected in Dewey's (1938) work on the theory of knowing. Dewey postulates that knowledge development is fundamentally dependent on situation. "What is designated by the word 'situation' is not a single object or event or set of objects and events, for we never experience nor form judgments about objects or events in isolation but only in connection with a contextual whole" (p. 66). This relational nature of situation and information is unified by the role of logic. Human logic is characterized by Dewey as the operational link between data and inquiry in that its principles lead to a continuity of inquiry. Dewey's (1960) ideations of knowledge in *The Quest for Certainty* contends that one develops knowledge through acting and operating within a situation. "If we see that knowing is not the act of an outside spectator but of a participator inside the natural and social scene, then the true object of knowledge resides in the consequences of directed action" (Dewey, 1960, p. 27). Human knowing does not occur according to formal or normative rules and data; rather, it is the association between observed and experienced situations. This conceptual clarification of knowledge allows me to move to its implications for schooling.

One might be eager to make the distinction that knowledge is directly related to teaching through schooling. After all, we went to school to learn, and so, can we confidently say that those who did not learn were not trained with the adequate information to learn, and therefore do not know? Bekerman and Zembylas (2017) provide a critical overview of learning, knowledge and schooling, and they define school as a technology developed by governments to ensure the development of obedient and socially coherent citizens. I mainly use their work in this section to highlight the role of formal schooling and question its appropriateness regarding human knowing. The authors argue that what is learned in the teaching of schools is not natural, and from the way in which I frame human knowing in the previous sections in this chapter, it can also be argued that the measurement of knowledge using typical student assessment instruments may legitimize the degree to which formal schooling is unnatural. Learning and assessment that build on positivist paradigms assume the presence of objectivity in information and a unidirectional input-output model (Bekerman & Zembylas, 2017).

However, a critical consideration of the learning that occurs at school is how long the learning survives within the knower. Bekerman and Zembylas (2017) highlight the major feature of schooling as being dependent on the presence of measurement and examination for the sake of legitimization within a social hierarchy. Models of education that have long been product-focused can be easily threatened by GenAI systems. Arguments *for* GenAI in education consider how it has the potential to promote access to information and content (Alasadi & Baiz, 2023; Feuerriege et al., 2024; Glazko et al., 2023; Goel, 2020). The systems provide data-driven information that is tailored and contextualized to a user's instructions, making the information more accessible in comparison to conventional search tools like Google. But this is not completely the case. Through their machine learning and LLM capabilities, these systems not only have the capacity to provide users with access to information in ways in which can be contextualized to their needs, they can also produce the 'products' of learning which formal educational models have long declared to be the very indicators of learning. The next section will focus on accessibility by breaking the word down into the two parts of access and ability. I do so to communicate the critical issue of how AI-generated learning can threaten existing models of education, but also how AI-mediated learning has the potential to provide

access to human ability that centers around the diversity and depth of human knowing.

Accessibility as Access Ability

Accessibility in general is used in everyday language but has specific meanings based on the context within which it is used. Iwarsson and Stahl (2003) view the term accessibility as being synonymous with approachability, attainability, and convenience. Early iterations by Hansen (1959) conceptualize accessibility as the potential opportunity for interaction. This ideation aligns with Iwarsson and Stahl's (2003) report on how it was used as an umbrella term for parameters generated to evaluate the extent to which humans have the ability to function within an environment. As a result, it was largely associated with building and planning legislation as well as transportation.

Granath Hansson (2017) refers to Swedish housing and land policies as considering accessibility at their cores. The policies, by design, intend for any individual, regardless of whether they have any impairments, to move in and out of buildings with ease. As another example, in transport and traffic planning, accessibility is defined as a way of thinking (Handy, 2020). The author refers to the compact city *der Stadt de kürzen Wege* in Germany, which translates to the city of short distances, as every destination within the city is within walking distance. I use these varying contexts to show the overlaps in how the term accessibility has been conceptualized, and how in each context, accessibility relates to the degree to which one has the ability to access an environment.

Across a disability context, the World Health Organization, International Classification of Functioning, Disability and Health (2023) conceptualizes accessibility based on the assumption that an accessible environment is one in which individuals with any or no impairments can independently function. Aligning with the previously mentioned conceptualizations, the accessibility of an environment will depend on the relationship between an individual and the environment (i.e., how the environment will and can be used). Iwarsson and Stahl (2003) frame this relationship around an ecological model of “the transaction between individual

competence and environmental press” (p. 59). Individual competence relates to biological, cognitive, and sensory-motor ability, and environmental press is the consideration that some environments can pose varying degrees of impact on individuals in relation to the unique and situated ways in which an individual experiences the environment.

Within digital spaces, the key issue lies in the assumption that it is the space that defines its accessibility. Kulkarni’s (2019) argument that technologies, policies and standards cannot be expected to create spaces for accessibility relates to McDermott’s (1998) view of how information systems cannot create knowledge on their own. Rather, the context in which accessibility is enacted through regulatory, social, and historical means will play a major role in the degree to which access is experienced by the user. Regarding GenAI systems specifically, it is vital to consider not only the access to the data-driven information but the interaction between the user and the prompts used to receive that information as well.

As a concrete example of accessibility considerations when using GenAI systems, Glazko et al. (2023) use an autoethnographic approach to explore the capabilities of GenAI for accessibility. They ask the questions of whether two GenAI systems (ChatGPT and Midjourney) can help meet access needs for people with disabilities and whether GenAI can help make content accessible for users. The authors discuss how GenAI parrots information without truly integrating it and how, even with their positive experiences, the authors had to ‘fix’ outputs post-hoc and reiterate their prompts to adjust the generated information. The lack of practical guidance was seen as a hindrance. Although both platforms were marketed as being user-friendly, they required a user’s understanding of what tools to use for which task and how to design prompts to receive the desired response, which was perceived by the researchers as being unintuitive. The authors call for the need for further guidance due to the unequal support available for the general use of GenAI versus support available for accessibility needs in GenAI tools. These shed light as to how GenAI cannot be a standalone tool but requires human knowing to work alongside it.

Where Do We Go From Here?

Considering the evidence behind what is understood about human knowing and accessibility, this chapter concludes with suggestions as to how GenAI systems can be used in education to access human ability. The first suggestion is for teachers to demystify the use of GenAI platforms and what they are capable of. Cao and Dede's (2023) work on the place of GenAI in educational systems is used in this section as an extension of McDermott's (1998) argument of the importance of leveraging what we understand about human knowing. Not only do we need to understand what human knowledge systems are capable of, but we also need to acknowledge what GenAI can do and teach us in the process. The authors use moonlight as an analogy: If we see AI as moonlight, human knowledge can be seen as sunlight. "As the moon reflects the radiance of the sun, AI reflects what humans are capable of—both truthful insights and biased misinformation" (Cao & Dede, 2023, p. 2). The recommendation made is for teachers to provide experiential learning opportunities for students to work alongside GenAI systems, such as ChatGPT, to deepen their understanding of how these systems work and of what they can and cannot do. Teachers can also focus on the process of learning, as opposed to the products, to make student inquiry visible and present in the learning.

The second suggestion in this chapter is for educational stakeholders to carefully and critically reflect on what GenAI systems *cannot* do. At the beginning of this chapter, I asked the readers of this paper to acknowledge the emotions you may feel in relation to what AI represents and threatens in our lives. What GenAI systems seem to threaten are the formulaic product-driven systems of evaluation that have been placed as legitimizing human knowledge within the formal institution of schooling. However, what it does not threaten (as of yet) is the human ability to deliberate based on the personally experienced and lived grounds of morality, ethics, values, social, historical, and cultural context. So, now that we are in the age of AI, learners may leverage what AI can provide in its ability to summarize existing data and pattern-driven information, and they may do so to access and expand the human ability to judge these systems of information against their own systems of knowledge. With this, we could attempt to shift the narrative of fear around GenAI towards learning that is AI-mediated. In ChatGPT's own words:

I don't know information in the way humans do. My "knowledge" comes from processing vast amounts of text data. I identify patterns, relationships, and information in the data I was trained on, and use that to generate responses. I don't learn or understand through experience or sensation; instead, I apply statistical models to predict the most relevant and coherent response based on the input I receive. This means my responses are based on the information contained in the datasets I was trained on up until my last update, without the ability to genuinely understand or have personal insights.

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9. Media Literacy Education, Misinformation, and the Digital Divide

Frank M Ventrella

As many of us are likely aware, we are exposed to misinformation and disinformation on a regular basis. It could be from personal sources such as friends or family members repeating what they have heard from others. However, perhaps the most prolific sources of misinformation and fake news are those found online. Crucially, the spread of inaccurate information, willfully or not, has real-world consequences. This has become apparent over the past decade when one considers the use of social media by political and other actors for the purpose of spreading fake news, panic, and polarity in societies (Mihailidis & Viotty, 2017). Perhaps one of the most famous examples is the 2016 ‘Pizzagate’ conspiracy, which resulted in an armed man entering a restaurant in Washington D.C. to rescue children whom he believed were being trafficked by the US Democratic Party (Cherelus, 2017; Miller, 2021). On January 6, 2021, the Capitol building was stormed by armed US citizens based on rumours of election fraud (Tan et al., 2021), which were exacerbated by social media platforms such as Facebook (Timberg et al., 2021). Let us not forget the rampant conspiracy theories regarding COVID-19 vaccines (Goodman & Carmichael, 2020) and the intentional intimidation of hospital workers in Canada based on similar conspiratorial theories (Bains, 2021; Fox, 2021). Nor can we overlook the use of disinformation in the invasion of Ukraine (OECD, 2022) or the recent use of Generative Artificial Intelligence to create and spread election disinformation (Swenson & Chan, 2024). How can we as a society arm our citizens to combat this online infodemic? Many studies conducted on misinformation and disinformation have focused the role of media literacies; however, what role does digital inequity play?

In this chapter, I will first outline digital inequalities and their connections to offline disparities. I will then discuss the nature of

misinformation and disinformation (e.g., fake news), as well as their relationships to media literacy before considering their connections to digital inequalities. I argue that while media literacy education is a promising path towards a future citizenry capable of sifting through the mass of online (mis)information, the ever-increasingly digital nature of society necessitates that online disparities be taken into account and more fully understood for this goal to be realized.

Digital Inequalities and the Digital Divide

There are considerable differences between individuals' levels of Internet access, which were publicly evident during the nation-wide COVID-19 lockdowns and school closures in which schools distributed devices to many families (Abdelaal & Andrey, 2022). However, despite this only recently becoming more obvious to the public, digital inequalities, including and beyond access, have been a topic of academic study for decades (e.g., Hargittai, 2002; Selwyn, 2004). Indeed, digital inequalities have often been conceptualized as being elements of a three-leveled digital divide.

In the first level, we find inequalities of digital *access*, which refers to differences in the extent to which individuals have access to digital devices and to the Internet (Haight et al., 2014). Digital access also entails the different types and numbers of devices; the type and speed of Internet connections; the ongoing expenses of maintaining that access, such as through subscriptions to Internet service providers, software, and so on; along with the costs of upgrading devices when they become outdated (van Deursen & van Dijk, 2019).

The second level of the divide comprises inequalities of digital *usage* (Selwyn, 2004; van Deursen & van Dijk, 2014) and digital *skills* (Hargittai, 2002, 2010). Digital usage involves the types of use through which individuals employ their access (e.g., word processing, video editing, social media, etc.) and the frequencies with which, and durations for which, they use their devices and the Internet (van Deursen & van Dijk, 2014). Relatedly, digital skills entail variations in the skills, knowledge, and competencies required to use digital technologies effectively (Hargittai, 2010).

Finally, the third-level digital divide encompasses inequalities of digital *empowerment*, or differences in self-efficacy and willingness to engage in online activities (Chen, 2015; Shank & Cotten, 2014), as well as disparities in offline *outcomes* (van Deursen & Helsper, 2015, 2018; Scheerder et al., 2019). Offline outcomes refer to the positive and/or negative effects which result from using the Internet, such as increased confidence, lifestyle changes, and career opportunities.

Digital and Social Inequalities: Related, Reinforced, Recurring

A crucial aspect of digital disparities is the fact that they are intertwined with various pre-existing offline social inequalities, including differences in socioeconomic status (SES) and education level (van Deursen & van Dijk, 2014, 2019); race and ethnicity (Hargittai, 2010; Rafalow, 2018); gender (Haight et al., 2014); age (van Deursen et al., 2017); disability (Darcy et al., 2019); and even geographical location (Hambly & Rajabiun, 2021). Many researchers have expressed that online disparities display reinforcing relationships with one another (e.g., Robinson et al., 2015; van Deursen et al., 2017) and that offline disparities may also be intensified through digital technology use (e.g., Ragnedda et al., 2022; van Deursen & Helsper, 2015). Put simply, one's offline resources and social positioning affects their levels of digital resources, and their levels of digital resources feed back into their offline circumstances.

As an example, a person looking for a career change may use their digital access to research higher-paying job opportunities. This not only requires a sense of empowerment and confidence, but also the knowledge and digital skills necessary to use a search engine or to safely create a profile on certain professional online platforms. This person applying and being hired with a better salary is an offline outcome which results from their use of digital technologies. Another example might be if, during a democratic election, a person is interested in learning more about the candidates. They use their device and Internet access to research each candidate, and they make an informed decision to vote for one of the candidates (i.e., an offline outcome). Importantly, both individuals in these examples had the offline resources, such as financial flexibility, required to have access in the first place. These are, of course, over-

simplifications of a highly complex network of relationships; nonetheless, they will serve for the purposes of this chapter.¹

Misinformation, Disinformation, and Media Literacy

Media literacy is thought to play a key role in civic education and in countering misinformation. Mihailidis and Thevenin (2013) argued that media literacy education results in citizens who are “critical thinkers, creators and communicators, and agents of social change,” (p.1614) and thus, media literacy is a means of fostering capacities which are crucial for engaged democratic citizenship. As such, the authors put forth a media literacy framework and contend that media literacy should be at the centre of pedagogical approaches for developing citizens who will engage in a participatory democracy. Indeed, in a recent study on media literacy education in the United States, Kahne and Bowyer (2019) found that youth who participated in more online learning opportunities in middle school and high school had a higher likelihood of engaging in online participatory politics as well as engaging in targeted political pressure. However, online political engagement is not the same as encountering and coping with online misinformation and fake news in polarized societies.

In order to understand the challenges of combatting misinformation, it is important to first understand its nature in polarized societal contexts such as those we are presently experiencing in North America. In such settings, Kahne and Bowyer (2017) noted that benefits of having knowledge and analytical skills are constrained. This is mainly due to the effects of individuals’ motivations and biases. Citing Kunda (1990) as well as Taber and Lodge (2006), Kahne and Bowyer (2017) articulated the differences between directional motivation and accuracy motivation. Directional motivation refers to the inclination to rationalize conclusions which support one’s prior opinions while accuracy motivation refers to the inclination to analytically investigate information more carefully and deeply based on the issue at hand rather than on prior beliefs. The former type of motivation is more frequently present when evaluating political information, and it gives way to particular biases:

¹ For more comprehensive overviews on digital and offline social inequalities, see Hargittai and Hsieh (2013), Helsper (2021), Robinson et al. (2015), and van Dijk (2020).

This process of directional motivated reasoning leads individuals (regardless of ideological leaning) to seek out evidence that aligns with their preexisting views (*confirmation bias*), work to dismiss or find counterarguments for perspectives that contradict their beliefs (*disconfirmation bias*), and evaluate arguments that align with their views as stronger and more accurate than opposing arguments (*prior attitude effect*) (Kunda, 1990; Taber & Lodge, 2006). (Kahne & Bowyer, 2017, p. 6)

Therefore, the current politically polarized environments, the prevalence of directional motivation, and its related biases present difficulties in using media literacy as a remedy for countering misinformation and fake news.

Being able to determine information and source credibility is an important part of media literacies. Kahne and Bowyer's (2017) study examined how media literacy and political knowledge affected young people's ability to judge the accuracy of claims related to controversial topics. Although directional and accuracy motivation both played a role in how youth judged the claims, the participants' pre-existing views affected their judgement more than the accuracy of the claims in question. Yet, even while prior motivations affect how we assess information, repetition plays a considerable role in determining the apparent credibility of a source as well. Pennycook et al. (2018) conducted a three-part study to investigate whether the Illusory Truth Effect is present with regards to fake news—that is, whether the number of times individuals have been previously exposed to news and fake news headlines affect the perceived accuracy of the stories. The results indicated that participants judged the headlines as being more accurate when they had been previously exposed to them. Furthermore, this continued to remain the case when the headlines did not align with the participants' pre-existing political views. Therefore, while directional motivation, alongside confirmation and disconfirmation biases, affect how individuals process misinformation, simply seeing or hearing a fake news story multiple times may increase its believability regardless of its political leaning.

Polage (2020) revealed another related challenge of countering misinformation: people who lack knowledge about a particular statement put high value on *who* is saying or sharing it with them when that source has similar

beliefs. This includes friends and family as well as experts and political figures. Accordingly, people judge like-minded individuals as more credible than those who have opposing views. Moreover, homophilous networks such as those found on social media platforms effectively create digital echo chambers which perpetuate the issue through the continued sharing of (mis)information by people who have similar pre-existing beliefs, and thus, increased credibility (Mihailidis & Viotty, 2017; Polage, 2020). Algorithms created and used by tech-giants also intentionally facilitate the creation of groups with like-minded individuals (Mihailidis, 2018).

Some scholars have advocated for increasing people's general knowledge prior to their exposure to misinformation and fake news as a means of countering it (e.g., Polage, 2020). However, this is a rather unwieldy task, not least because of the ever-changing digital landscape of the Internet. Furthermore, more knowledge does not necessarily equate to judging fake news as inaccurate. Indeed, with particular regards to political knowledge, Kahne and Bowyer (2017) found that those who have more knowledge tend to use it to reinforce their pre-existing beliefs and biases rather than more accurately judge the veracity of a statement. However, their results also indicated that media literacy learning opportunities increased the likelihood that participants deemed evidence-based information as accurate but not misinformation. This remained true when information and misinformation supported pre-existing beliefs. Thus, countering misinformation and fake news is no easy task, but media literacy education remains a potential path forward.

Given the political polarization we have been experiencing in recent years, scholars have articulated updated frameworks for media literacy education. For example, Mihailidis and Viotty (2017) contended that media literacies need to be readjusted to better respond to increasing polarization and disinformation. They articulate that media literacies be repositioned to foster connections between people with different views and to embrace caring and relationality rather than individuality. Moreover, media literacies should be reimagined to facilitate active participation and to emphasize civic impact. Mihailidis (2018) further expanded upon the civic intentionality of media literacies, outlining five constructs in an effort to ensure that they remain applicable in current contexts. These “are based on the value systems of *agency*,

caring, persistence, critical consciousness, and emancipation” (p. 153). A similar approach was recently put forth by Share and McBride (2022), who assert that helping students develop their critical media literacy at school will hone their critical thinking skills, prepare them to uncover hidden and normalized power structures, and empower them to participate in democratic society in a way that works towards social and environmental justice. They advocate for the use of the Critical Media Literacy Framework, which encompasses six theoretical understandings with related questions aimed at steering teachers and their students towards the development of critical media literacies. Critical media literacy combines facets of digital and traditional literacies while also engaging a critical aspect which involves interrogating the relationships between information and power. It is a melding of critical pedagogy and media literacy.

In summary, countering misinformation and fake news is a highly complex task of huge social and political importance. Media literacy education has shown promise in helping promote the skills and qualities which are necessary for an engaged and participatory democratic citizenry while also promoting accuracy motivated reasoning. At the same time, directional motivated reasoning, homophilous networks, information repetition, and even political knowledge affect how and whether individuals judge information and sources to be credible. Additionally, frameworks which promote a shift towards more relational and critical media literacy education have been put forth to account for the changes in the political and digital landscape and their associated challenges.

Digital Inequalities and Media Literacy

While media literacy and critical media literacy have been advanced as a means of promoting engaged democratic citizens, it is important to note that the role of digital inequalities has often been overlooked or only very briefly touched upon in the literature reviewed in this chapter. For instance, Share and McBride (2022) asserted that digital “technologies have opened new opportunities for progressive educators to revitalize education and empower youth” using a critical media literacy approach (p. 170). While this may be true, it overlooks that digital inequalities are present not only at the individual and

familial levels (Keen & France, 2022), but also at the community (Hambly & Rajabiun, 2021) and international levels (Hargittai & Hsieh, 2013). Although it is possible that schools may temporarily lessen digital inequalities between students by providing them with digital access in the classroom (Ragnedda & Ruiu, 2020)—such as during the online learning opportunities which are included in media literacy education—it is vital to stress that this is not necessarily the case. Indeed, in my previous research, Grades 4-6 teachers in Ontario not only indicated that their students experienced varying degrees of digital inequalities at home and at school, but also that teachers themselves experienced digital inequalities, which in turn, may affect the digital learning opportunities they provide to their students (Ventrella & Cotnam-Kappel, 2024). Furthermore, there were considerable differences in access levels between schools as well.

Given that media literacies have been broadly conceptualized as including both traditional and digital forms of communication (Kahne & Bowyer, 2019; Mihailidis, 2018), it is also crucial that the digital aspect be expanded upon. Leu et al. (2017) outlined the Dual Level Theory of New Literacies, which acknowledges that digital literacies are in a state of constant flux and incorporates digital skills and traditional literacies along with a host of other aspects including an increased importance on critical thinking and analysis. The notion that digital technologies—and thus, the literacies required to engage with them effectively—are dynamic and ever-changing is an important one because it implies that the online learning opportunities and pedagogical practices aimed at helping students develop those literacies will need to consistently and rapidly adjust as well. Therefore, the differences between teachers' digital access, usage, skills, and empowerment must be addressed if they are expected to continuously adjust their digital pedagogical practices to help students develop critical media literacies. Consequently, digital disparities may not only have an impact on the extent to which students develop the crucial capacities for democratic citizenship, but also on their ability to assess and interact with online (mis)information through accuracy motivated reasoning.

In light of the connections between the digital divide and critical media literacy, there exists an opportunity to explore the intersection of the two.

Accordingly, future research should include more comprehensive, holistic investigations into digital inequalities and critical media literacy education. Such efforts will undoubtedly give rise to important implications for education and for broader democratic society.

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10. Fostering Critical Thinking through Social Media Propaganda Analysis

Masoumeh Rahimpanah

Our daily lives, both online and offline, are increasingly permeated by propaganda. Social media acts as a potent amplifier, reinforcing existing beliefs and biases within our networks. While traditionally viewed negatively, propaganda also holds the potential for ethical use in promoting positive social change (Hobbs et al., 2019). However, maintaining a critical lens toward new technologies remains crucial, highlighting the importance of media literacy. The concept of propaganda, as Hobbs (2021) argues, is a valuable tool for educators worldwide to expose students to the manipulative tactics employed by digital media. Analyzing historical examples, such as using an “either-or” framing to stifle critical thinking while attacking opponents (Mann & Hobbs, 2022), can further illuminate these tactics.

Effective propaganda education requires tailoring it to students’ experiences. This requires moving beyond lectures and fostering discussion and debate (Imperio et al., 2020). By engaging in these activities, students develop critical thinking skills, acknowledge the limitations of knowledge, and embrace intellectual humility. The global push to integrate critical thinking into national curricula underscores the importance of equipping individuals to defend against disinformation (Horn & Veermans, 2019; Imperio et al., 2020). To this end, this chapter seeks to answer the following question: How does analyzing social media propaganda cultivate the multifaceted critical thinking skills required to navigate the complexities of the digital age?

The Landscape of Social Media and Propaganda

The internet has revolutionized access to information, offering a vast array of e-books, reliable journalism, and specialized knowledge, along with a

troubling surge of misinformation and propaganda (Miller & Bartlett, 2012). Social media platforms have become breeding grounds for personalized propaganda, fueled by sophisticated algorithms that tailor messages to individual preferences and behaviors (Hobbs et al., 2019; Hobbs, 2020). Friends and family inadvertently share these customized messages, further blurring the lines between fact and fiction (Hobbs et al., 2019). This constant stream of reinforcing messages can create a sense of confirmation bias, wherein individuals are more inclined to accept information that aligns with their existing beliefs. Furthermore, the “new shiny object” phenomenon can exacerbate this issue, leading us to focus on the latest platforms without developing the critical thinking skills necessary to navigate the complexities of online information (p. 2).

While propaganda’s manipulative nature is undeniable, a critical examination reveals valuable insights into the complexities of the 21st century. Understanding how the term is interpreted across cultures can foster cross-national dialogue and a deeper appreciation for the multifaceted connotations of propaganda (Hobbs, 2020). The potential dangers of this polluted information ecosystem are becoming increasingly apparent with politicians and thought leaders alike expressing concern about the influence of social media giants in Silicon Valley (Hobbs, 2021). Malicious actors exploit these platforms to spread disinformation that can infiltrate mainstream media and even incite violence. Scholars actively research these issues but intentionally avoid using the word propaganda. For instance, Claire Wardle and Hossein Derakhshan (2018) coined the term *malinformation* to describe information intended to cause harm, even if not necessarily false.

As educators grapple with the challenges of online life. In the view of Hobbs (2021), the concept of propaganda serves as a valuable tool for understanding the emotional impact of digital media and its strategic use for social influence. Integrating the study of contemporary propaganda into media literacy curricula, particularly for high school students, can foster critical thinking, multi-perspectival analysis, and a healthy curiosity.

Propaganda in the Digital Age

Propaganda has undergone a dramatic transformation in the digital age. No longer solely wielded by governments, social media enables anyone to create and disseminate persuasive messages, blurring the lines between activism and propaganda (Hobbs, 2021). Social media algorithms play a pivotal role in shaping the information landscape, customizing content feeds to individual preferences and beliefs, and potentially fostering echo chambers (Miller & Bartlett, 2012). Amidst the vast pool of online information, distinguishing truth from falsehood is essential for informed decision-making. Nevertheless, traditional methods of discernment may falter in the face of the internet's unique dynamics.

But what exactly is propaganda? Moving beyond negative connotations, a more neutral definition views propaganda as strategic communication aimed at influencing society (Hobbs, 2021). This definition is fluid, adapting to the evolving social landscape. Importantly, propaganda is not inherently negative. People are naturally drawn to messages that reinforce their existing beliefs, even positive ones like those promoting democracy (Hobbs, 2020). Propaganda can also evoke comfort in a world overflowing with information (Hobbs, 2021). Educators can leverage this by introducing students to positive propaganda used by responsible activists to enact social change. These “positive propagandists” understand the power of language and imagery to promote positive messages (p. 409).

Man & Hobbs (2022) argue that to effectively analyze the persuasive techniques of propaganda, learners must delve deeper. This includes considering the emotional aspects of messages, inferring the intended audience interpretation, and identifying the author's intent. Furthermore, students should envision the potential impact of the message on diverse audiences. Recognizing rhetorical appeals is crucial in understanding how propaganda actively engages audiences by addressing their hopes, fears, and aspirations through symbolic language.

Empowering Students in the Age of Propaganda

Propaganda, with its ability to evoke emotions and shape public opinion (Man & Hobbs, 2022; Farkas & Neumayer, 2019), has long been a powerful

tool, used for both positive and negative purposes (Hobbs, 2020, 2021). While Miller and Edwards (1936) argued against censorship, advocating instead for critical analysis, educators today face the challenge of equipping individuals to navigate the complexities of propaganda in the digital age.

Media literacy education offers a multifaceted approach to this challenge (Hobbs, 2021). In elementary and high schools, educators may focus on building trust in credible news sources by teaching students how to evaluate information sources. Other approaches involve students in creating their own media or civic engagement projects that address community needs. Some educators even leverage the power of positive propaganda like public service announcements to highlight the role of media in a democracy.

Hobbs (2020) states that at the higher education level, media literacy delves deeper. Educators discuss the limitations of the internet's democratic potential and how news itself can function as a form of propaganda. Students critically analyze perspectives suggesting that news media can reinforce existing power structures. This critical analysis is crucial, but navigating its implementation presents challenges. Unlike higher education professors, K-12 educators face limitations in how they can label information due to their role as representatives of the state (Hobbs, 2020, 2021). Simply labeling something as bad may not be effective, and educators must avoid unintentional indoctrination. Critical thinking skills alone do not guarantee trust in news sources, making a multifaceted approach essential.

The concept of beneficial propaganda, while seemingly counterintuitive, finds application in initiatives like the Love Has No Labels Campaign (Hobbs, 2020). Public service announcements promoting road safety, health awareness, and social justice serve as examples of positive propaganda (Hobbs, 2021). The key lies in critical evaluation, considering the message, target audience, and cultural context (Hobbs, 2020). In navigating the complexities of propaganda in the digital age, educators are tasked with fostering critical analysis and discernment while acknowledging the dual nature of propaganda's influence on societal narratives and beliefs.

Critical Thinking: A Multifaceted Tool for the Digital Age

Critical thinking is a cornerstone skill for navigating the complexities of the 21st century. Recognized by the World Health Organization (WHO) as a core psychosocial skill, critical thinking empowers individuals to analyze information and experiences objectively (WHO, 1994). This cultivates informed decision-making and a healthy skepticism towards various influences (Imperio et al., 2020).

While definitions vary across disciplines, there is a core set of abilities associated with critical thinking. Philosophers emphasize logical reasoning and avoiding fallacies in arguments and cognitive psychologists focus on the behaviors used in critical thinking, such as considering evidence and multiple perspectives (Thonney & Montgomery, 2019). Educators see critical thinking as a developmental process, with frameworks like Bloom's (1956) taxonomy highlighting its progressive nature (Imperio et al., 2020).

The information explosion of the digital age has heightened the importance of critical thinking, particularly within the realm of information literacy (IL). Traditional IL skills, which once focused on library resources, need to adapt to the complexities of online information. Gurak (2001) and others advocate for translating these IL skills to the digital world, emphasizing the challenges of social media and online communities (Miller & Bartlett, 2012).

As proposed by Miller and Bartlett (2012), the concept of digital fluency builds upon traditional critical thinking skills to address the specific challenges of online information. It encompasses net savvy, understanding the online environment, strong critical evaluation skills to assess online information, and consuming information from diverse sources to form a balanced understanding. Digital fluency equips users to navigate the complexities of online information and avoid manipulation.

In essence, critical thinking is not a singular skill, but a multifaceted toolset that equips us to navigate the information age (Abrami et al., 2015). By honing our ability to evaluate evidence, analyze arguments, and consider diverse perspectives, we can become shrewd consumers of information in the digital world. According to Miller and Bartlett (2012), this is especially crucial as traditional information literacy skills need to adapt to the ever-evolving

online landscape and digital fluency, built upon this foundation of critical thinking, empowers individuals to be responsible digital citizens and make informed decisions in a world saturated with information.

Educators play a vital role in equipping students with these critical thinking skills. There should be a shift from simply managing online risks to empowering youth with digital fluency (Miller & Bartlett, 2012). This approach integrates critical thinking with practical internet literacy skills to combat online misinformation effectively. Bulger and Davidson (2018) further emphasize the importance of media literacy, highlighting its foundation in critical thinking skills that encourage critical engagement with media messages.

How Analyzing Social Media Propaganda Fosters Critical Thinking

The digital age, with its constant stream of information on social media platforms, presents a challenge: discerning truth from falsehood. Critical thinking skills are paramount for navigating this complex landscape, and analyzing social media propaganda offers a powerful tool for sharpening these skills (Hobbs, 2020).

Engaging in such analyses equips students with the ability to evaluate sources effectively. Propaganda often relies on biased or misleading information. By dissecting the techniques used in propaganda, students learn to identify red flags, assess source credibility, and distinguish fact from opinion (Hobbs, 2020). Furthermore, analyzing propaganda helps students identify manipulative tactics. Propaganda employs emotional appeals, logical fallacies, and targeted messaging to influence behavior. By learning to recognize these tactics, students develop a healthy skepticism toward persuasive messages encountered online and beyond (Man & Hobbs, 2022).

As stated by Hobbs et al. (2018b), analyzing social media propaganda extends beyond individual discernment, fostering open dialogue and consideration of diverse perspectives. It serves as a social process of interpretation, where students collectively construct meaning by sharing their interpretations of propaganda messages, thus fostering critical thinking and open discussion. Moreover, engaging in discussions across national and cultural

borders enables students to analyze messaging through different lenses, providing valuable context and filling information gaps.

Examining social media propaganda encourages the development of intellectual humility (Paul, 1984b). Propaganda is often cleverly crafted to exploit existing biases and manipulate emotions. Analyzing it highlights the limitations of knowledge and the importance of acknowledging the partial and incomplete nature of information. This breeds a sense of intellectual humility, a crucial quality for navigating the ever-changing information landscape of the digital age.

Challenges of Teaching About Social Media Propaganda

Educating students on social media propaganda presents a complex challenge. While efforts to enhance critical thinking skills and promote media transparency are commendable, there are potential drawbacks. Hobbs and McGee (2014) highlight concerns that heightened skepticism could lead to increased cynicism and alienation. To mitigate these concerns, educators employ strategies like analyzing hoax websites, enabling students to scrutinize authorship, publication dates, and source credibility, thus fostering a healthy skepticism toward online information and developing the ability to make informed choices when consuming digital media (Hobbs, 2020).

Neglecting propaganda analysis in education has significant societal consequences, as emphasized by Hobbs (2020) and Hobbs et al. (2019). It underscores the importance of teaching critical media evaluation skills, especially in an era of political polarization and rampant misinformation, fostering informed citizenship and combating the spread of falsehoods (McDougall, 2019). However, emotions, such as those stirred up by propaganda, can also disrupt critical thinking, necessitating additional effort for reasoned responses (Hobbs, 2020).

To ensure responsible education, ethical considerations are crucial. Analyzing propaganda demands honesty, transparency, and respect for diverse viewpoints (Hobbs, 2020). This empowers students to navigate the complexities of online information while upholding ethical principles.

Conclusion

To summarize, fostering critical thinking through social media propaganda analysis equips students to be discerning citizens in the digital age. As Hobbs (2020) notes, social media platforms act as both conduits and catalysts for propaganda; they shape perceptions and influence actions. Analyzing historical and contemporary examples of propaganda equips students with a powerful tool: the ability to dismantle its manipulative tactics (Man & Hobbs, 2022).

This critical dissection of propaganda techniques, from emotional appeals to logical fallacies, empowers students to navigate the vast sea of information online (Hobbs, 2021). They hone their ability to discern truth from falsehood, a skill that transcends individual understanding. Through open discussions across borders, students not only sharpen their critical thinking but also cultivate empathy for diverse perspectives, nurturing a more informed and responsible citizenry, as envisioned by Hobbs (2020).

Media literacy education instills intellectual humility. By recognizing the limitations of knowledge and the partial nature of information, students cultivate a critical mindset (Hobbs, 2020), which is essential for navigating the complexities of social media. This intellectual curiosity fosters a healthy skepticism towards biased information and empowers students to seek out diverse perspectives.

Ultimately, encouraging critical thinking through social media propaganda analysis empowers students to become active participants in a democratic society, enabling them to challenge the status quo and reject a world of passive acceptance of media propaganda, authoritarian leadership, and harmful systems (Clark & Soutter, 2024). By dismantling the manipulative forces of propaganda, students can engage in responsible discourse, promoting empathy and understanding. As we move forward, let us champion media literacy education, nurturing a generation equipped to confront the challenges of the digital age with informed resilience.

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SECTION V

Mental Health and Safety in Education

Kayode Orolade and Sarah McAllister

As time passes and the education system evolves, curricula undergo change, new technologies see the light of day, and contemporary issues surface. However, the priority of educational institutions tends to remain unchanged: to provide for the safety and growth of their students. All branches of education—early childhood, primary, secondary, and higher education—are united by their common goal of creating a safe culture in which students may blossom. As students will always be exposed to dangers that could threaten their personal development, it is *safe* to say that such a priority will reign supreme across time and educational institutions. The means by which this priority is addressed, conversely, differ from one school to another.

In Chapter 11, Kayode Orolade delves into the complex and contemporary issue of school violence. It goes beyond the sensational headlines to explore the underlying tension between creating a safe school and potentially needing to save a school grappling with entrenched patterns of violence. Saving a school requires a multi-faceted approach that addresses the root causes of violence, provides comprehensive support for students, and fosters a culture of respect and inclusivity. In Chapter 12, Sarah McAllister focuses on building flourishing university and college communities through the power of positive education. Special attention is given to positive education's potential to foster higher education students' well-being and equip them to overcome adversity throughout their academic journey and beyond. To encourage and facilitate the implementation of positive education across universities and colleges, practical evidence-based guidelines for designing a positive education course are also presented. Together, these two chapters light a beacon of hope for students of all ages that school can be a place in which they may grow.

11. School Violence: Safe Schools or Save Schools?

Kayode Orolade

Safe Havens or Pressure Cookers? Unpacking School Safety

Education is a fundamental right of every child. Education enhances the development of a child by instilling critical thinking, creative talents, as well as the ability to gain meaningful life skills (Spicer, 2014). Moreover, education influences social development of learners through efficient collaboration with peers to develop social relations, confidence, dignity, and self-esteem. Fredrick et al. (2021) described a school as any inclusive social space where learning activities occur—a space where tolerance, solidarity and respect serve as a vital resource for promoting peaceful resolutions among learners, teachers and the wider community. Billingham et al. (2020) argued that the mental health of learners is better strengthened in school through school connectedness. School connectedness can be described as the learners' perceptions that the adults in the school both care for them as well as for their learning. However, the mental health of learners could be hampered in school through violence (UN, 2016). If extra measures are not put in place, the school environment could be the fertile ground to expose learners or teachers to violence, which in turn groom learners to become violent (Thumann et al., 2016).

Victims and witnesses of violence might perceive school as rather unsafe and its manifold opportunities as elusive (World Bank, 2022; UN, 2016). This could be attributed to fear, trauma, and pain that might have insulated the excitement of learning and discovery that was originally projected by the school. School-based violence is a global concern. According to UNICEF (2021), about 150 million students, between the ages of 13 and 15 globally experience peer-to-peer violence within and around their schools. Furthermore, about 720 million school-aged students live in countries where they are not fully

protected by the law from corporal punishments (UNICEF, 2021). In the US, there were 857,200 incidences of violence in public schools between 2021-2022 (NCES, 2024). It is important to state that cases of school-based violence are sometimes unreported or under-reported in Canada (Ouellet & Taylor, 2019; National Post Staff, 2023).

Against this background, saving a school requires bridging the gap between standards and practice. Hence, it requires a more proactive and holistic approach. Guaranteeing the safety of the school extends beyond merely creating a safe space; it addresses the root causes of violence and charting a sustainable possible peaceful alternative. According to Billingham et al. (2020), factors such as poverty, lack of mental health resources, exposure to violence in the community, and many others could also contribute to school-based violence. Hence, saving the school might mean offering comprehensive social work services to address student needs beyond academics or integrating social-emotional learning programs to equip students with conflict resolution skills and emotional regulation strategies. Similarly, encouraging a culture of respect requires ongoing efforts to maximally reduce prejudice and promote inclusivity within the school community. However, navigating the space between safety and saving could be a rather delicate dance.

The Landscape of School Violence: Beyond the Headlines

School violence is not a singular entity. It manifests in a disturbing variety of forms, each leaving its mark on the school community. Incidences of school violence are usually sensational each time they are reported in the media. As Jacobs (2014) submitted, the media reportage of school violence is episodic in nature, exonerating it as an offshoot of the society, thereby citing individuals. According to the UN (2016), there are four major forms of school-based violence: (a) bullying; (b) sexual and gender-based violence; (c) physical violence; and (d) psychological violence. Bullying is regarded as a pattern of behavior, and verbal abuse being the most prevalent. The UN (2016) affirmed that if bullying is not controlled, it could ultimately lead to physical violence. Boys are more prone to physical bullying, while girls are more likely to engage in verbally harassing their peers (NCES, 2019). Digital technologies also make

children around the world vulnerable to bullying and harassment in ways that might be difficult for adults to detect and protect since its occurrence is in virtual spaces with little or no supervision from the adults. According to Statistics Canada (2023), about 25% of youth between ages 12-17 reported being cyberbullied in 2018, and 29% of parents were sometimes or never aware of the online activities of their children or wards.

Sexual violence is another harassment that occurs in schools, but it is usually underreported due to stigmatization, retaliation from the aggressor, or fear of not being believed (UN, 2016). Sexual violence could be perpetrated by the teacher or peers. The C3P (2018) report established that most victims of school-based sexual violence were female (75%) compared with males at just 25%. Moreover, in about 138 cases, the offenders have another position that gives them access to children. Sometimes, sexual violence emanates from stereotypes, gender inequality, as well as gender-imposed roles. For instance, in some African countries, girls might be harassed if they go against the traditionally assigned roles in society, and boys are more likely to be subjected to corporal punishment than girls (Evans et al., 2023; Jacobs, 2014; UN, 2016).

Sexual violence also diminishes learners' self esteem; results in lower academic performance; predisposes victims to STIs, including HIV; and increases unwanted pregnancies (Evans et al., 2023; Parkes et al., 2022). There has been an increase in the outlawing of the use of physical or corporal punishment in schools around the world, especially for those who still perpetrate such acts (UN, 2016). However, there are incidences of increasing cases of psychological violence in classrooms by teachers who are not trained to administer positive discipline (Duru & Balkis, 2018; Vanner & Almanssori, 2021).

It is important to state that indigenous children also experience violence, as the supposed social structures that ought to protect them are often torn apart when they were forced off their land (UN, 2016; Kaspar, 2013). According to the UN (2016), other groups of children vulnerable to school-based violence are not limited to children with disabilities; ethnic, religious, or cultural minorities; or asylum and refugee seekers. These cohorts usually do not report

violence so as not to attract more animosity, and if they do report it, they are not taken seriously (UN, 2016).

The impact of school violence is far-reaching, as victims may experience physical injuries, emotional trauma, and difficulty concentrating in school (Duru & Balkis, 2018; Evans et al., 2018). The UN (2016) argued that the socioeconomic background of students can play a significant role. Similarly, students from low-income families may experience stress and instability at home, increasing the risk of acting out in school (Billingham et al., 2020). Mental health issues like depression, anxiety, or trauma can also contribute to violence. Students struggling with these challenges may lash out or struggle with managing their emotions. Furthermore, perpetrators may face legal consequences and struggle with feelings of guilt or shame. In the same vein, bystanders can also be affected, experiencing fear, anxiety, and a sense of helplessness (Parkes et al., 2022). Overall, school violence creates a climate of fear and disrupts the very foundation of a learning environment—the ability to feel safe and supported. Understanding the different forms of school violence, as well as its contributory factors, are vital for the development of effective prevention and intervention strategies. By addressing the root causes and creating a supportive school environment, working towards a future where schools are truly safe havens for learning and growth becomes achievable.

Strategies for Creating a Safe School: Building a Multi-Layered Defense

It is the responsibility of the school to create a safe learning space for all, and tackling any school-based violence is peculiar to the situation and circumstances of that school (UN, 2016). There is no unilateral approach that guarantees school safety as it requires a combination of proactive prevention strategies (Spicer, 2014). Although metal detectors and security surveillance systems might deter some incidences of physical and sexual violence, their effectiveness in sustaining ‘safe’ learning spaces is controversial. As argued by Spicer (2014), “no amount of physical security can stop every outsider attack and even the most robust threat assessment programs can fail to identify potentially violent behavior on time to stop all insider attacks” (p.40).

However, robust security protocols involving trained personnel and clear emergency response plans are essential for addressing immediate threats. According to Peterson (2021), Black students in the United States are more vulnerable to harsh disciplinary measures, which could be linked to the teachers' limited behavioral knowledge of Black students. Similarly, as posited by Billingham et al. (2020), especially in the present-day United States, parents now consider the safety of schools, among other factors, with the goal of minimizing threats and risks to their children. It is, however, important to note that schools with intensive physical security protocols are usually less appealing to parents (Billingham et al., 2020).

Fostering a positive school climate is crucial for creating a safe and supportive learning environment (Kubiszewski et al., 2023). According to the National School Climate Council (NSCC; 2021), a sense of belonging and diversity programs that promote positive relationships among students, staff, and the community should be cultivated. This can involve initiatives like peer mediation programs, student leadership opportunities, and restorative justice practices that focus on repairing harm and fostering accountability (Kubiszewski et al., 2023). Relatedly, resilience is the ability of children to successfully cope with challenges, adversities, and everyday stress, with the ultimate goal of formulating positive relationships with others (UN, 2016). Early childhood initiatives could be instrumental in fostering resilience among students, as they would encourage and motivate victims of school-based violence among peers.

As posited by the UN (2016), any meaningful approach to solving school-based violence must be student-centered. Effective anti-bullying programs go beyond simply raising awareness; Kubiszewski et al. (2023) submitted that such programs should equip students with bystander intervention skills. This would guide them to intervene safely when they witness bullying and promote restorative justice practices that address the root causes of bullying behavior. Equipping students with social-emotional skills is a powerful preventative measure. For instance, the Collaborative for Academic, Social, and Emotional Learning (CASEL) advocates for programs that teach students self-awareness, relationship skills, responsible decision-making, and emotional regulation strategies (Li et al., 2023). These skills can help students manage

conflict peacefully, build healthy relationships with peers, and cope with stress in a constructive way (Kubiszewski et al., 2023).

There are quite a number of strategies to ensure safe schools, but selecting the right choice that would meet the needs of each school is very important. One can argue that this is where evidence-based practices become imperative. It is noteworthy that there are some tested interventions with positive results in reducing school-based violence. For instance, according to Joslyn et al., (2014), the Good Behavior Game (GBG) uses positive reinforcement to promote classroom cooperation, and it has a good violence prevention curriculum for elementary students. The resultant effect of this program includes reduction in aggressive behavior and improvement in positive school climate. By prioritizing evidence-based practices, schools can maximize their impact and ensure that the resources they dedicate to safety are making a real difference. By implementing a combination of security measures, positive climate initiatives, anti-bullying programs, and evidence-based Social and Emotional Learning programs, schools can create an inclusive safe haven where students can thrive.

Saving Schools in Crisis: Turning the Tide on Violence

There is no smoke without a fire; violence in schools does not just erupt all of a sudden. Schools with established patterns of violence are often faced with deeper societal issues. Quite a number of studies have established that there is a close association between poverty and violent communities (Bordin et al., 2022; Billingham et al., 2020; Tracy et al., 2021). Students experiencing economic hardship may face instability and stress at home, increasing the likelihood of acting out in school (Billingham et al., 2020). Furthermore, limited access to mental health support could render students more vulnerable to depression, anxiety, or trauma. Tracy et al. (2021) argued that the presence of gang activity within a community can create a culture of violence that spills over into the school environment. By conducting a thorough needs assessment, schools can identify the root causes of violence specific to their context (UN, 2016). This may involve surveys, focus groups, and collaboration with local

social service agencies. Understanding the root causes is crucial for developing targeted interventions that address underlying issues fueling the violence.

Education revolves around refining the totality of humanity. With a 'pedagogicalcentric' style of education, social and emotional needs would be left unmet. Learners who lack emotional support feel isolated and unsupported (Thumann et al., 2016; Spicer, 2014). Schools striving to become sanctuaries of safety need to invest in programs that go beyond academics. This might involve the integration of social work services to connect students and families with resources such as housing assistance or food banks (Kubiszewski et al., 2023; NSCC, 2021). Moreover, partnerships with community organizations in providing on-site access to mental health counseling services could equip students with the tools to manage their emotions and cope with challenges in a healthy way (Li et al., 2023). These programs could teach students the needed coping mechanisms and emotional regulation skills to prevent past trauma from fueling future violence.

The social environment of a school could influence the relative peace of such a school. One of the fundamental aspects of "saving" a school revolves around building strong relationships with the surrounding community. For instance, schools could create open communication channels and involve parents in decision-making processes (Evans et al., 2023; UN, 2016). Likewise, partnering with local organizations could provide valuable support systems for students. Evans et al. (2014) affirmed that mentoring programs can connect students with positive role models; similarly, out-of-school programs can offer safe spaces for students to engage in enriching activities. Moreover, law enforcement could be instrumental in creating a safe learning space (Spicer, 2014). It is therefore important to prioritize restorative justice practices over purely punitive measures.

Kaspar (2013) posited that collaboration with law enforcement can focus on de-escalation tactics and conflict resolution strategies. This is with the goal of promoting a sense of safety without resorting to criminalization. The difficult journey of transformation from violence-prone schools to safe schools starts by identifying the root causes of the violence as well as by prioritizing the well-being of the students and active community engagement. Tracy et al.

(2019) suggested that both federal and state policies play a significant role in supporting schools in championing their course against violence. Policies that address gun control, increase funding for mental health services in schools, and promote evidence-based prevention programs can all contribute to creating safer learning environments (Spicer, 2014; NSCC, 2021). Additionally, policies that promote restorative justice practices over zero-tolerance approaches can help in addressing issues related to school-based violence while fostering social-emotional growth.

Conclusion

School violence casts a long shadow and disrupts both the learning environment and the deserving fundamental sense of safety that students deserve. A safe school goes beyond security measures; it fosters a positive climate and equips students with social-emotional skills, which addresses the root causes of violence. "Saving" a school necessitates a multi-pronged approach which involves identifying root causes, providing student support beyond academics, and partnering with the community. Ultimately, the path towards a future free from school violence requires a multi-faceted strategy. Proactive prevention through positive school climate initiatives and social-emotional learning programs lays the groundwork. Clear intervention plans and post-incident support ensure timely responses and healing for everyone affected.

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12. The Place of Positive Education in Higher Education

Sarah McAllister

Imagine a campus where students unlock their potential and flourish. They believe they have what it takes to succeed both academically and holistically. They are empowered to make skillful decisions for themselves and their community, and they feel prepared to face the obstacles that come their way. They are not bogged down by personal hardships. They encounter a challenge and think to themselves: “bring it on.” They rise above adversity. They are resilient.

While such a campus is conceivable, it is difficult to envision a prosperous student community due to the current state of affairs in higher education institutions worldwide. We do not bat an eye when we hear about the incessant, widespread deterioration in university and college students’ mental health (Emmert et al., 2024). From excessive academic demands, major life transitions, and parental expectations (Reddy et al., 2018) to financial pressures, adaptation to autonomous learning, and the search for self-identity and purpose in life (Slemp, 2017), higher education students must contend with numerous, often novel challenges that contribute to their elevated stress levels (Asif et al., 2020; Barbayannis et al., 2022; Linden et al., 2023). These significant stressors, either coinciding with or engendered by the higher education journey, often leave students feeling anxious, lonely, and lost (Slemp, 2017). Coupled with these poor mental health outcomes is an alarmingly high prevalence of mental illness, especially among first-year higher education students (Auerbach et al., 2018). To grapple with their difficulties, students flock to bars and parties or may resort to other maladaptive coping mechanisms such as social withdrawal, rumination, and suicidal ideation (Stallman, 2019; Stallman et al., 2022). But what if, instead of escaping their problems or numbing their worries, students had the tools to face them head-on? What if they were equipped to not only

overcome their struggles, but also learn and grow from them? And what if their campus was the birthplace of this personal development and growth?

I believe positive education¹ can serve as a springboard for greater resilience among higher education students. Positive education, in a nutshell, is the teaching of positive psychology (Green et al., 2011), which is the scientific study of human flourishing (Linley et al., 2006). This evidence-based approach to education involves applying the science of well-being within educational settings to promote students' academic success while increasing their happiness and alleviating their ill-being (Seligman & Adler, 2019). Although substantial efforts have been and continue to be made to implement positive education within elementary and secondary schools (Goodwin et al., 2021; Government of Ontario, 2023; School Mental Health Ontario, 2023; Waters & White, 2015; Wiedermann et al., 2023), higher education students' need for positive education has been given insufficient attention. This chapter justifies positive education's crucial place in higher education by painting a picture of what positive education currently looks like in universities and colleges around the world, discussing the well-being benefits of positive education, and championing the implementation of mandatory positive education courses for all first-year students in higher education institutions. Scientifically validated guidelines are provided to assist professors in designing a compulsory positive education course and delivering the material in an effective and meaningful manner.

Positive Education in Higher Education Institutions Worldwide

While their implementation efforts do not match those of elementary and secondary schools, higher education institutions across the globe are gradually integrating positive education into their departments and programs (Arasil et al., 2020; Hobbs et al., 2022; Kleinman et al., 2014; Slemp, 2017). Nested in learning that is both theoretical and practical, positive education provides students with the opportunity to become familiar with seminal empirical studies in the field of positive psychology, apply the material to their

¹ Throughout this chapter, *positive education* will be used to refer to any curricula (e.g., courses and programs) grounded in positive psychology, mental health, and/or well-being.

own lives through concrete exercises, and reflect on their experiences to consolidate their learning. One well-known positive education curriculum that has been integrated into higher education is *Positive Psychology 1504*, an undergraduate course offered at Harvard University that gives primacy to well-being as opposed to dysfunction, and *transformation* as opposed to information (Russo-Netzer & Ben-Shahar, 2011). Guided by the question *How can we help ourselves and others become happier?*, this positive education course bridges theory and practice as well as action and reflection by providing students with optimal human functioning tools they can apply to help themselves and their community flourish. With the largest attendance in the history of Harvard's Department of Psychology, *Positive Psychology 1504* was the most popular course at the university in the Spring of 2006.

Another esteemed course that positively marked students' lives and further underscores higher education students' need for positive education is Yale University's Happiness class, formerly known as *PSYC 157: Psychology and the Good Life* (Shimer, 2018). This undergraduate positive education course, which aims to teach students how to cultivate scientifically supported practices for a happier life, quickly became the most popular course in Yale's history. However, Yale and Harvard are not the only U.S. universities with a positive education: New York University's *Science of Happiness* seeks to help students both manage mental health challenges and enhance their well-being (Schlechter et al., 2023). Rooted in current understanding of emerging adulthood, this undergraduate course is particularly relevant to the challenges young students face in higher education and is designed to help them build skills in core components of cognitive behavioural therapy, mindfulness, and goal setting.

On the other side of the world, the University of Melbourne in Australia offers a Master's program, two professional certificates, and three undergraduate courses grounded in positive psychology—one of which was voted among the best courses at the university (Slemp, 2017). These positive education curricula have received exceptionally positive feedback from students, indicating that they “appreciate being taught valuable life skills that are typically not taught in university-level curricula, particularly through an experiential mode of delivery” (p. 143). Espousing this active learning

approach, the University of Ottawa offers a positive education course that is also cherished by undergraduate students: *APA 4117 Quality of Life: Theory, Research and Application*. By equipping its students with practical happiness tools (e.g., journaling, meditation, stress management), this course has been recognized for increasing students' mental health and self-compassion (Pastore & Fortier, 2023) as well as mindfulness and optimism (Pastore et al., 2023). Positive education courses offered in higher education institutions have been demonstrated to benefit students on several other fronts: improved well-being, affect, and stress levels (Young et al., 2022); increased happiness (Arasil et al., 2020) and life satisfaction (Schlechter et al., 2023); greater meaning in life, positive emotion, and social relationships (Smith et al., 2021); as well as enhanced academic well-being, academic self-efficacy, and academic hope (Ramazani & Ahmadi, 2022), to name a few. Whether imbedded within a class or offered as a separate course, positive education also appears to confer greater student well-being outcomes than traditional psychology courses (Goodmon et al., 2016; Kleinman et al., 2014; Lee, 2017; Smith et al., 2021; Young et al., 2022).

Despite the overwhelmingly beneficial effects of positive education, its implementation in higher education contexts is still in its infancy. Further, the few universities and colleges that *do* provide positive education typically do not require their students to learn well-being skills and practices during their studies. The rare exceptions are Üsküdar University in Istanbul (Arasil et al., 2020) and TecMilenio University in Mexico (Slemp, 2017), both of which offer compulsory positive education. In an ideal world, all higher education institutions would follow these two universities' example and implement mandatory positive education courses to equip students with self-care tools and coping skills that will serve them throughout their academic journey. As the transition from secondary school to higher education is a particularly stressful time for emerging adults (Auerbach et al., 2018; Taylor et al., 2014), I believe first-year higher education students could particularly benefit from such positive education courses. The following section presents practical guidelines supported by scientific evidence to help professors effectively develop and teach a compulsory positive education course to promote a thriving student community.

Designing and Teaching a Mandatory Positive Education Course 101

Suppose you are a professor who strives to positively change students' lives with the science of human flourishing and implement a positive education course that all students at your institution will take during their first year of studies. To assist you in the pursuit of your (awesome) objective, I have broken it down into manageable steps that will pave the way for a successful positive education course: 1) become acquainted with the pedagogical principles that lay the foundation of positive education, 2) consider the lens through which you will approach mental health in your classroom, 3) focus on the minutiae of your course content, and 4) choose the teaching tools and techniques you will employ to optimize your students' engagement, learning experience, and growth.

Pedagogical Principles of Positive Education

Positive education courses are known to combine two forms of learning: theoretical—whereby students learn about empirical research on optimal human functioning and mental health—and practical—which allows students to apply the theory and engage in what we call positive psychology interventions (i.e., evidence-based activities intended to enhance well-being and positive feelings, behaviours, and/or cognitions; Sin & Lyubomirsky, 2009). The idea here is to have students put the scientific positive psychology findings they learn into practice, since “merely learning about the empirical findings and theories is not enough to achieve real behavior change” (Santos, 2018, p. 3). This active learning approach enables students to not only sharpen their understanding of the course material, but also address personal concerns which, according to positive psychology researchers Pninit Russo-Netzer and Tal Ben-Shahar (2011), fosters their intrinsic motivation to complete the class assignments. Actively connecting with the course content has also been found to increase students' positive emotions and happiness as well as to improve their perception of the positive education course that provides these meaningful opportunities (Bridges et al., 2012). Implicit within this practical form of learning is the process of self-reflection, which invites students to reflect on their experiences and insights throughout the course in a journal. Active reflection has the potential to augment students' retention of the course content,

along with their personal development and well-being (Russo-Netzer & Ben-Shahar, 2011), thus yielding another opportunity for growth. Taken together, the theoretical and practical learning approaches inherent in positive education make for a transformative class replete with impactful content that is bound to support students' mental health.

Before you start thinking about the course content you will cover to promote *your* students' mental health, it is important to determine how you will define and frame "mental health" in your classroom, which is a commonly misunderstood construct. In the following section, I suggest a viable framework you may use to approach mental health with your students.

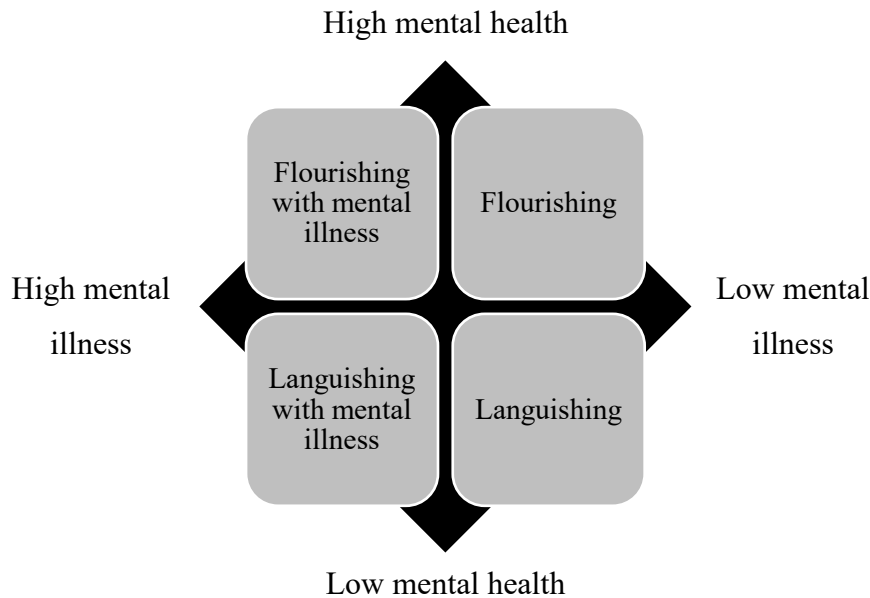
Holistic Approach to Mental Health

Often, the first words that come to individuals' minds when they think about mental health are associated not with well-being (e.g., happiness, thriving), but mental illness (e.g., depression, anxiety). However, mental health and mental illness are distinct constructs. The latter comprises any mental, emotional, or behavioural disorder (National Institute of Mental Health, 2017), while the former constitutes psychological, emotional, and social well-being (Keyes, 2002). Keyes' (2014) Dual-continua Model of Mental Health and Mental Illness (Figure 1) depicts this distinction between mental health and mental illness by positioning the two constructs on separate continua. The model demonstrates that, contrary to popular belief, an absence of mental illness does not signify good mental health, nor does the presence of mental illness signify poor mental health. In other words, languishing (i.e., low mental health) without mental illness is possible, as is flourishing (i.e., high mental health) with mental illness.

The adoption of this holistic approach to mental health would afford many benefits in addition to standardizing the way mental health is defined across positive education curricula. By applying Keyes' model as a framework for positive education in universities and colleges, we portray mental health and mental illness not as opposites, but as two phenomena that can coexist. In doing so, we may change students' perception of mental health while instilling within them a sense of hope that they can flourish, even with a mental illness. The

Figure 1

Dual-continua Model of Mental Health and Mental Illness



Note. Adapted from *Bridging Occupational, Organizational and Public Health: A Transdisciplinary Approach* (p. 182), by C. L. M. Keyes, 2014, Springer. Copyright 2014 by Springer Science+Business Media Dordrecht.

application of this framework would also reject the aim of traditional mental health curricula of purely treating mental illness by including mental health promotion in the equation. We are no longer solely concerned with “fixing” the bad; we also seek to build the good. We embrace an approach that is not only reactive, to help students restore their mental health after a setback, but also proactive, to help students improve their mental health at present. We help students “move beyond merely surviving, to thriving” (Allen & Kannangara, 2024, p. 68) and “beyond the minimisation of pain into the maximisation of happiness and fulfilment” (Seldon & Martin, 2017, p. 17). For these reasons, I encourage you, as a professor, to employ this holistic approach to mental health as a blueprint for developing your positive education course. But ultimately, the way you define mental health in your classroom is your choice; I simply ask that you keep your students’ best interests at heart. Once you have decided on an approach that you find suitable, you may start giving thought to the content

you wish to include in your course.

Positive Education Course Content

The theoretical content of positive education is routinely underpinned by Seligman's (2011) PERMA model of well-being, according to which Positive emotion, Engagement, Relationships, Meaning, and Accomplishment enable flourishing. This theory then informs the practical content of the course, which takes the form of in-class and/or take-home positive psychology interventions. Standing at the heart of positive education, these activities have been shown to bolster higher education students' well-being and resilience while enriching their academic experience (Allen & Kannagara, 2024). Common positive psychology interventions embedded within positive education are gratitude journaling, savouring, mindfulness exercises, random acts of kindness, goal setting, using character strengths, Three Good Things (i.e., writing down three things that went well that day and their causes; Seligman et al., 2005), and Best Possible Self (i.e., writing about one's best possible self in the future after having achieved all of one's goals; King, 2001).

As students are more likely to derive benefit from taking courses that have been tailored to the professor's interests and personal experiences (Russo-Netzer & Ben-Shahar, 2011), I invite you to reflect on your values and mission as an educator and curate your course content accordingly. Prompts such as "What have I learned or done that contributed to my well-being?" and "If I could put together the class I would have loved to take as a student, what would it look like?" can facilitate this personal reflection and, in turn, the selection of your course content (Russo-Netzer & Ben-Shahar, 2011). This self-reflective practice may also help you identify the teaching tools and techniques that best suit your teaching style and showcase your strengths as an educator.

Positive Education Teaching Tools and Techniques

To create engaging and meaningful learning experiences, professors have a host of positive education tools and techniques from which they may choose. For example, they can use stories, funny videos, quotations, metaphors, and personalized course material—which help deepen student-professor connections (Russo-Netzer & Ben-Shahar, 2011). They can also begin their

classes with music, humour, or simple mindfulness exercises to further strengthen their students' well-being (Oades et al., 2011). Other practices that have been suggested to improve higher education students' well-being within the context of positive education include using a supportive tone and providing students with the flexibility to choose from a range of topics and skills to apply to their own lives (Khan & Rieger, 2023). Finally, whole-class and small-group discussions appear to be another effective teaching technique commonly employed within positive education (Khan & Rieger, 2023; Schlechter et al., 2023). These group interactions allow students to discuss and better understand course content as well as share their learning experiences and reflections so they can construct knowledge with one another. Conversational learning is regarded as an important element to integrate in higher education courses—especially those with a large number of students—as it not only maximizes learning, but also builds peer relationships in the classroom (Russo-Netzer & Ben-Shahar, 2011).

In addition to carefully selecting their course content and teaching tools, professors must also see that the material is delivered authentically. Pninit Russo-Netzer and Tal Ben-Shahar (2011) assert that authentic professors reveal their true selves when they teach and create a classroom climate that aligns with their aspirations. For instance, if they wish to impassion and motivate students, they exude passion and motivation when they teach. Authentic professors also exemplify the change they want to see in their students by practicing the skills they preach. As putting one's words into action renders one's teaching more credible and influential, authentic professors are more likely to inspire and bring about positive change in their students.

Once you have followed the aforementioned guidelines, ask yourself: Does my course include both theoretical and practical learning components? Does my approach to mental health serve my students' best interests? Does my course content (e.g., topics, concepts, group discussions, positive psychology interventions) reflect my values and personal experiences? Do my teaching tools and techniques conform to the ethos of positive education and leverage my strengths as an educator? Am I committed to delivering the material authentically? If the answer to all these questions is "yes", congratulations! You have designed a positive education course and are now equipped to teach it in

a way that is both effective and meaningful.

Conclusion

Can you now imagine a campus where students are resilient and thriving? And can you see how positive education provides a compelling entry point for building this community of strong individuals? The overview of the body of knowledge vis-à-vis positive education efforts in higher education institutions presented in this chapter gives promise to the well-being benefits of positive education while highlighting its regrettably scant place in universities and colleges worldwide. To address this issue, along with the pervasive student mental health crisis, I advocate for the implementation of compulsory positive education courses for all first-year students in higher education institutions. It is hoped that the evidence-informed guidelines for designing and teaching such a course will not only help professors convey positive psychology material effectively and meaningfully, but also show university and college governing boards the feasibility of implementing mandatory positive education courses in higher education. Such curricular changes will gain increasing importance as mental health concerns among university and college students continue to rise. Fortunately, positive education has the power to curb this mental health crisis by preparing students to overcome life's adversities throughout their academic journey and beyond. Positive education has the power to create wholesome academic cultures in which students not only get by, but prosper, in all spheres of life. Positive education has the power to turn that vibrant campus—the one that is bustling with buoyant students who are ready to leap over any obstacle life throws their way—into reality.

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