

**HEART LOCK-IN: SELF-INDUCING FEELINGS OF LOVE AND COMPASSION TO
DECREASE PERFECTIONISTIC THINKING IN ELEMENTARY SCHOOL AGED
CHILDREN**

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DEDICATION

This project is dedicated to my younger self, the little girl who thought she was letting everyone down when she made mistakes, and to any other kids who feel the same way. I see you.

ABSTRACT

The purpose of this project is to provide a comprehensive overview of the current research on perfectionism, with a particular focus on elementary students. This study develops and proposes a detailed research design aimed at providing a class activity that reduces perfectionistic thinking through the use of regulation strategies, including emotional regulation, compassion, and self-compassion. The Heart Lock-In initiative by HeartMath shows promise in reducing perfectionism among students and is well-suited for classroom application. Classroom initiatives offer universal support to children who might otherwise lack access to necessary assistance. This project demonstrates the importance of preventative measures in addressing the increasing prevalence of perfectionism and offers a targeted approach to managing perfectionistic thoughts in educational settings.

Keywords: perfectionism, emotional regulation, compassion, self-compassion, elementary students, heart lock-in

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LIST OF ABBREVIATIONS

| | |
|-------|---|
| APA | American Psychological Association |
| ATA | The Alberta Teachers' Association |
| CAPS | Child-Adolescent Perfectionism Scale |
| CBT | Cognitive Behavioral Therapy |
| CFT | Compassion-Focused Therapy |
| CMPB | Comprehensive Model of Perfectionism Behaviour |
| ER | Emotional Regulation |
| HLI | Heart Lock-In |
| HFB | Heart-Focused Breathing |
| HRV | Heart Rate Variability |
| HRVCB | Heart Rate Variability Coherence Biofeedback |
| OOPjr | Other-Oriented Perfectionism Subscale-Junior Form |
| REB | Research Ethics Board |

CHAPTER 1: INTRODUCTION

Perfectionism, once considered a moral aspiration, has now become a significant global mental health concern, particularly among students. This change reflects a growing awareness of how unrealistic standards can impact mental health. The shift in perception is driven by the recognition of how perfectionism can contribute to increased anxiety, depression, and stress among individuals. Students, who are often under immense academic pressure, are especially vulnerable to these negative impacts. The rise of social media and societal expectations has further exacerbated the issue, leading to unrealistic standards and self-criticism. Approximately 27% of children ages 7–11 struggle with high perfectionism (above 75th percentile; Melero et al., 2020), a condition counterproductive to learning. This trend is evidenced by the notable rise in perfectionism among students across North America and in the United Kingdom (Curran & Hill, 2019). With respect to the location in question, Alberta, the demand for youth mental health services has increased by 40% in 2023 compared to previous years (Canadian Mental Health Association, 2023). Furthermore, a nationwide Canadian study examining mental health in school-aged children from grades 6 to 10 found that mental health suffers as students progress through these grades, especially among girls (Public Health Agency of Canada, 2020). Addressing perfectionism and its mental health impacts is crucial for fostering healthier and more resilient students.

Perfectionism is characterized by setting excessively high standards that are nearly impossible to achieve (Frost et al., 1990), and is linked to a range of negative outcomes, including anxiety, depression, and eating disorders (Magson et al., 2019; Martin et al., 1996; Sherry et al., 2003). The negative consequences generally outweigh any potential benefits of perfectionism (Bieling et al., 2004; Stoeber & Otto, 2006). Fortunately, various strategies,

including emotional regulation (ER), compassion, and self-compassion, show promise in reducing perfectionistic tendencies among students, though research remains limited. By examining these factors, this study seeks to identify an effective strategy that can be implemented in educational settings to promote student well-being. Addressing and mitigating perfectionistic tendencies is crucial for fostering healthier psychological well-being and resilience among students.

Present Project

This project will attempt to expand on and integrate the literature on perfectionism by proposing a potential research intervention, Heart Lock-In (HLI). Heart Lock-In is a compassionate ER technique that can be used to target perfectionistic thinking in students. Common perfectionism prevention research assesses college students and adults, and there is a notable gap in research among children and youth. The following research design proposes how one could evaluate an intervention on perfectionistic thinking in an elementary classroom setting. Thus, the purpose of this project is to develop a research model capable of evaluating the efficacy of HLI as a classroom activity in reducing perfectionistic thinking among elementary-aged students. The research proposal outlined in this project has not yet been completed. The proposed methodology provides a first-person perspective on how the study would have been conducted. This practical guide, with its clear instructions, can serve as a resource for future researchers to carry out the study. Results could emphasize the importance of exploring interventions that reduce perfectionism in students, as well as how schools and teachers can integrate HLI into their classrooms to foster compassion and promote ER in students. Given the gaps in the literature on effective tools for reducing the harmful effects of perfectionism, the role of ER and self-compassion in mitigating perfectionism requires further exploration. Mental

health research is becoming increasingly prevalent, yet studies on perfectionism are often overlooked. While the detrimental effects of perfectionism are recognized and researched, the root causes and pervasive impact of perfectionism on individuals remain largely ignored by society. Additionally, there is a need for evidence-based techniques to increase self-compassion in classrooms. The potential of HLI to promote ER and compassion is significant, offering hope and optimism for children's well-being. It is worthwhile to study how a practical HeartMath intervention, specifically the HLI technique, influences perfectionism in Albertan students.

Specifically, this study proposes three research questions:

R1. Does a 6-week, 5-minute HLI intervention reduce perfectionistic thinking in 9–11-year-old students?

R2. Is a 5-minute HLI intervention more likely to lower participants' reported levels of other-oriented perfectionism and self-oriented perfectionism thinking scores compared to their socially prescribed perfectionism thinking scores?

R3. Is a 5-minute HLI intervention suitable as a daily classroom learning activity, as determined by assessing students' perceived value of the activity?

It is hypothesized that perfectionistic thinking will decrease after utilizing the HLI intervention for a 6-week period. Additionally, it is theorized that perfectionistic thinking specific to other-oriented perfectionism and self-oriented perfectionism will decrease after engaging in the exercise for a 6-week period, in comparison to socially prescribed perfectionism. This theory is based on the components of the ER exercise, HLI, that emphasize compassion towards oneself and others, thereby reducing self-criticism and criticism for others while not affecting criticism received from others. Compassion-based interventions reduce perfectionistic tendencies (see Compassion and Perfectionism, Chapter 2), whereas poor ER is associated with perfectionism

(see ER and Perfectionism, Chapter 2). Through open-ended survey questions and interviews, it is anticipated that students will perceive the HLI exercise as a beneficial daily activity within the classroom.

Conducting research in schools presents significant challenges, which create potential project limitations. Student engagement, parental consent, and teacher collaboration are unknown. Due to these difficulties, the project proposes involving a small sample of students from a single school division. If the initial research proves successful, the number of schools and participants can be increased. This project focuses on Albertan students but has the potential to pave the way for further research across Canada.

Project Structure

This paper is organized as follows:

1. Chapter Two considers the existing literature on perfectionism, regulating strategies, and their relationship with perfectionism.
2. Chapter Three details the research design and describes the methodology for the study.
3. Chapter Four presents the expected findings, benefits for students and educators, and limitations of the project, followed by a discussion of current and further uses of the research. The chapter concludes with a note on how this research would benefit the author while practicing as a psychologist during her career.

Finally, the paper concludes with key points and recommendations. Having established the foundational concepts and objectives of this project in Chapter 1, we now turn to Chapter 2, which will provide a thorough review of the relevant literature to contextualize and support the presented research design.

CHAPTER 2: LITERATURE REVIEW

This chapter provides background on several areas related to this study, drawing on various existing resources and research to establish the foundations for this multi-dimensional project. A brief discussion of perfectionism and its impacts on mental health sets the stage, leading to an explanation of why this study is important. Psychosocial development and various aspects of perfectionism are considered in depth, including the history and rise of perfectionism, impacts of perfectionism, models of study, types of perfectionism, and prevention. Then, regulating strategies consisting of ER, compassion, and self-compassion are provided, followed by various links between these. Links between these strategies and perfectionism are then explored, followed by an introduction to the HLI technique.

Perfectionism involves having extremely high standards for oneself – standards that can be nearly impossible to achieve (Frost et al., 1990). The constant pressure of perfectionism and being unable to meet one's own standards can be detrimental to mental wellness. In an educational context, perfectionism can be particularly negative as children and youth are graded while learning new skills and concepts. Positive school environments, where students have supportive teachers, are associated with more positive mental health outcomes (Public Health Agency of Canada, 2020).

Effective ER is closely linked to improved mental health, reducing the risk of anxiety, depression, and other emotional disorders (see also Daros et al., 2021; Fredrickson et al., 2008; Guerrini-Usubini et al., 2023; Gross & Ford, 2024). The development of ER begins in early childhood and continues into adulthood (Tottenham, 2024), shaping an individual's ability to cope with adverse life experiences and build healthy relationships. Teaching ER skills in school

is essential for fostering a positive learning environment and supporting students' academic and social success (Feist et al., 2016).

Developing strong ER skills lays the foundation for cultivating compassion, as understanding and managing one's emotions fosters empathy and kindness towards others. Research shows that practicing compassion benefits others and enhances one's own mental health, reducing anxiety and depression and increasing overall well-being (Allegro, 2022; Wilson et al., 2019). Teaching compassion in schools can create a more inclusive and supportive learning environment, promoting kindness and other-oriented perfectionism among students (Welford & Langmead, 2015). Perfectionism appears to reduce the capacity for compassion—particularly towards the self; lower levels of self-compassion can lead to difficulties with ER (Sher et al., 2024). Self-compassion can significantly reduce anxiety and depression (Ferrari et al., 2019; Hughes et al., 2021; Yeo et al., 2023) while boosting resilience and life satisfaction (Phillips & Hine, 2021; Zessin et al., 2015). Practicing self-compassion can facilitate personal growth by allowing individuals to learn from their mistakes without self-criticism or judgment (Neff, 2022). Despite its benefits, many people appear to struggle with self-compassion, possibly mistaking it for weakness or feeling selfish when engaging in self-compassionate practices. In turn, “the opposite of self-compassion is self-criticism” (Centre for Clinical Interventions, 2023, para 1), which is common amongst perfectionists.

By fostering compassion, individuals can counter the self-critical tendencies inherent in perfectionism, promoting a healthier and more balanced approach to personal achievement and self-evaluation. Throughout North America and the United Kingdom, perfectionism has been on the rise among students (Curran & Hill, 2019). Striving for often unattainable goals, perfectionistic individuals experience a range of negative outcomes, including anxiety,

depression, and eating disorders (Magson et al., 2019; Martin et al., 1996; Sherry et al., 2003).

While detrimental in many ways, some aspects of perfectionism, including positive striving, can be beneficial (Bieling et al., 2004; Stoeber & Otto, 2006). Regardless, the severity of the maladaptive factors associated with perfectionism often overrides its potential benefits.

Therefore, a need exists to examine how to reduce the effects of perfectionism (Galloway et al., 2022) and protect individuals from its negative consequences (Lin & Muenks, 2022).

Research with adults has shown a negative correlation between self-compassion and maladaptive perfectionistic tendencies (Dundas et al., 2017; Suh & Chong, 2022), however, our understanding of compassion-focused practices and their effects on perfectionism in children is limited. Few studies have attempted to explore the effects of compassion-focused interventions on perfectionism in children (Fairweather-Schmidt & Wade, 2015; Olton-Weber et al., 2020; Osenk et al., 2023; Nobel et al., 2012; Vekas & Wade, 2017; Woodfin et al., 2021).

Heart Lock-In is an emotional restructuring technique that holds promise as a compassion-focused technique. Heart Lock-In promotes positive emotions, including compassion, to regulate physiological coherence, a state of heart and brain synchronization, and alignment between diverse physiological systems (HeartMath Institute, 2016; McCraty, 2000). Despite extensive research on the efficacy of HLI techniques on reducing test anxiety in primary education (Aranberri-Ruiz et al., 2022) and improving academic performance in college students (McLeod & Boyes, 2021), to date no research examines the effects of HLI on perfectionism in children.

Why Is This Study Important?

Given the detrimental effects perfectionism has on mental health, it is important to examine ways to address perfectionism. The classroom serves as an ideal setting for

implementing tools and strategies to address perfectionism. This manuscript underscores the importance of implementing preventative measures (e.g., HLI) within educational contexts to reduce perfectionistic thinking among students and guide future research in this direction.

Perfectionism is driven by emotions (feelings of inadequacy, fear of failure, etc.), and understanding how to address feelings of perfectionism is one form of emotional intelligence. In recent years, the significance of emotional intelligence on students' academic performance has been increasingly recognized (Sheela, 2023). While most teachers agree that teaching emotional skills is necessary (Bridgeland et al., 2013), many report not receiving sufficient support or adequate training (Reinke et al., 2011). Within this study, teachers will be trained in HeartMath by a certified HeartMath trainer. Educators' well-being is similarly important. As Hoffman and De France (2024) highlight, when educators are burned out or stressed, they will struggle to succeed when working on new initiatives for students. As teachers are trained in HeartMath, they can receive personal benefits from using the emotional regulation strategy. These benefits enable teachers to care for their emotional and psychological needs, allowing them to show up positively for their students. Targeting educators first can shift their focus from viewing social-emotional learning as another duty to an exciting lesson where they can share insight with students (Hoffman & De France, 2024). Recent research has validated this 'adults-first' approach, demonstrating that it yields direct benefits for educators and positive student outcomes even before explicit instruction begins (Baumsteiger et al., 2022).

Schools need realistic, time-appropriate, evidence-based exercises with simple instructions that can be readily implemented in classrooms to support students' development of emotional intelligence and overall well-being. Research is needed regarding the role of self-compassion in reducing perfectionism and increasing self-compassion in classrooms. In an effort

to fill this gap, this study investigates how the HeartMath intervention can be implemented in classrooms, and its influence on perfectionism among Albertan students.

This proposed research design will measure perfectionistic thoughts before and after learning the compassion-focused emotional restructuring technique, HLI. Three distinct dimensions of perfectionism will be measured depending on who and where the standards are coming from and aimed at: other-oriented (aimed at others), self-orientated (aimed at self), and socially prescribed (felt from others; Hewitt & Flett, 1991). Below, I introduce and describe the theoretical constructs that provide a foundation for this manuscript, then integrate these constructs to highlight their connections (see Figure 2).

Psychosocial Development

Given the focus in this study is on children aged 9–11, examining developmental milestones within this age group is crucial. Psychosocially, children in this range acquire numerous emotional and social skills and begin forming a sense of self-worth, or an absence of such becomes apparent (Erikson, 1964). Emotional regulation plays a pivotal role in all psychosocial development aspects. The competence to manage and express emotions appropriately is challenging for children to acquire (Feist et al., 2016). As children grow, they become more attuned to how their emotions impact others and start regulating their emotional responses accordingly (Feist et al., 2016). For instance, in seminal studies, Carolyn Saarni (1984) investigated how children regulate their emotions in social contexts. When faced with receiving a less favoured toy, children expressed their disappointment quickly when alone. However, those aged 9 and older tried to conceal their disappointment when an experimenter was present, demonstrating a degree of emotional maturity. These findings suggest that the children in our

study will be gaining competence in managing and expressing emotions and developing empathy for others.

Adolescence becomes a transient period of ER, with reports of frequent negative emotions, strong reactions to emotional events, and intense fluctuations in emotional experiences (Riediger, 2024). Early to mid-adolescence may see temporarily lowered ER capacity (Riediger, 2024) and frequent use of maladaptive regulation strategies (Cracco et al., 2017). These findings suggest that 9–11 years old is an optimal period to teach ER strategies to better support youth as they enter adolescence.

Since perfectionism has foundational ties to personality, exploring how personality changes throughout childhood is imperative. Longitudinal research indicates that personality stability is moderate in childhood and increases throughout adolescence and early adulthood (Slobodskaya, 2021). Children appear less emotionally stable during middle childhood (ages 9–11), and various traits may fluctuate throughout this period (Slobodskaya, 2021). For instance, conscientiousness increases from early childhood into the elementary school years, while sociability and positive emotions tend to decrease (Slobodskaya, 2021). These findings are crucial to my study, as they highlight the importance of focusing on the age group of children in middle childhood when exploring personality development related to perfectionism. However, our comprehension of personality development during childhood and adolescence remains in its infancy.

Perfectionism

Historically, the concept of perfectionism originates from the goal of living a holy life on earth (Oxford English Dictionary, 2023). Modern-day perfectionism, as defined by the American Psychological Association (APA), is “the tendency to demand of others or of oneself an

extremely high or even flawless level of performance, in excess of what is required by the situation” (2018, para.1). The APA associates perfectionism with “depression, anxiety, eating disorders, and other mental health problems” (2018, para.1). Perfectionism is not a diagnosable condition under the Diagnostic and Statistic Manual of Mental Disorders (DSM-5). As Suh et al. (2019) highlight, “perfectionism is involved in the etiology and maintenance of psychological distress symptoms, but perfectionism itself is not a disorder” (p. 474). Although there has been discussion about ‘clinical perfectionism’, this concept overlooks its multidimensional nature and has largely been rejected by professionals (Hewitt et al., 2003).

In this manuscript, perfectionism is defined as a personality characteristic existing along a continuum. As a multidimensional construct, perfectionism encompasses various behaviours and thoughts. The present study specifically focuses on perfectionistic thoughts. Individuals who self-report excessively high standards for themselves, become distressed over minor mistakes, and feel like failures if they do not achieve their best, fall higher on the continuum. Individuals who self-report striving to do their best but accepting mistakes and feeling no external pressure to exceed their capabilities, fall lower on the continuum. There is no threshold on this continuum that indicates an individual has perfectionism; rather, those higher on the scale exhibit stronger perfectionistic thoughts than those lower on the scale.

Hamachek (1978) describes two types of perfectionists: normal and neurotic. Normal perfectionists accept minor flaws in their work, while neurotic perfectionists are overly concerned with mistakes. For these individuals, even minor mistakes cause distress (Hamachek, 1978). Neurotic perfectionists rarely meet their standards (Hamachek, 1978). They believe their performance is worthless if it is not perfect (Frost et al., 1990, p. 451). These individuals are driven by fear of failure rather than the need for achievement (Hamachek, 1978). They create

self-doubt about their ability to perform, contributing to task avoidance (as cited in Frost et al., 1990). As a result, perfectionism has detrimental effects on multiple areas of an individual's life, including work, school, and social relationships (Stoeber & Otto, 2006).

Rise of Perfectionism

Curran and Hill (2019) conducted a meta-analysis showing rising rates of perfectionism among college students from 1989 to 2016. Young people are feeling more pressure from others and are placing more pressure on themselves and others (Curran & Hill, 2019). The authors attribute this increase to cultural shifts toward competitiveness and individualism (Curran & Hill, 2019). Sherry et al. (2016) agree that cultural shifts appear to inspire more personal desires to be perfect. Between generations, the increase in socially prescribed perfectionism was twice the size of the rise in self-oriented perfectionism and other-oriented perfectionism (Curran & Hill, 2019). Flett et al. (2022) argue that socially prescribed perfectionism is a public health concern due to cultural and societal pressures. For example, while societal pressures concerning appearance can be detrimental for young girls, those experiencing socially prescribed perfectionism might perceive even stronger pressures and turn to maladaptive coping strategies.

Adaptive versus Maladaptive Perfectionism

Perfectionism is not detrimental in all contexts. Bieling and colleagues (2004) argue that perfectionism includes maladaptive evaluative concerns and positive strivings. Maladaptive factors involve dysfunctions such as unrealistic expectations (Hong et al., 2017), which are strongly correlated with depression and anxiety, including test-taking anxiety (Bieling et al., 2004), and are negatively correlated with life satisfaction (Wang & Wu, 2022). Positive strivings, in contrast, often have positive or neutral qualities (Bieling et al., 2004), aligning with Hamachek's (1978) notion that normal perfectionism can be inherently beneficial. Adaptive

perfectionists tend to have healthier ER strategies (Richardson et al., 2014) and are psychologically healthy, while maladaptive perfectionists are more susceptible to psychological distress (Kawamoto et al., 2023).

Adaptive Perfectionism

Perfectionistic strivings are positively associated with traits such as openness, conscientiousness, neuroticism, and extraversion (Stricker et al., 2019) and are related to higher levels of positive affect, satisfaction with life, and active coping styles (Stoeber & Otto, 2006). Individuals with high perfectionistic strivings but low perfectionistic concerns exhibit higher self-esteem, agreeableness, and social integration, while also experiencing lower levels of anxiety, depression, maladaptive coping styles, and interpersonal problems (Stoeber & Otto, 2006).

Maladaptive Perfectionism

Perfectionistic concerns have been heavily researched and are associated with negative aspects of life (Affrunti et al., 2016; Bieling et al., 2004; Johnston, 2017; Kawamoto et al., 2023; Morris & Lomax, 2015; Smith et al., 2015; Stoeber, 2018; Stoeber & Otto, 2006; Suh & Chong, 2022; Woodrum & Kahn, 2022). Concerns are positively correlated with neuroticism and negatively with openness, extraversion, agreeableness, and conscientiousness (Stricker et al., 2019). Maladaptive perfectionists score higher in physical and verbal aggression, anger, and hostility compared to adaptive perfectionists (Ruiz-Esteban et al., 2021).

Some research characterizes maladaptive perfectionism as self-critical perfectionism, attributed to severe self-criticism and overly harsh evaluations of one's actions or prolonged concern about others' expectations (Dunkley et al., 2003). Self-criticism is linked with sustained negative affect for over one week (Dunkley et al., 2003). Those with self-critical tendencies may

quickly attribute fault to their personal inadequacies rather than external factors (Dunkley et al., 2003). Individuals experiencing perfectionistic thoughts often exhibit heightened self-blame and judgement, such as in the case of self-oriented perfectionism (Rudolph et al., 2007). Self-critical perfectionism correlates with reduced levels of mindfulness and self-compassion (Tobin & Dunkley, 2021), prompting interventions aimed at individuals with elevated self-criticism to incorporate mindfulness and compassion-based elements (Krieger et al., 2019).

Trait Model of Perfectionism (1991)

Perfectionism is a multidimensional construct (Curran & Hill, 2019). Hewitt & Flett's (1991) trait model of perfectionism identifies three main types: self-oriented perfectionism other-oriented perfectionism, and socially prescribed perfectionism. Self-oriented perfectionism arises when individuals impose unrealistic standards on themselves (Hewitt & Flett, 1991). For example, an individual may have an irrational need to be perfect, which leads to impractical self-evaluations (Curran & Hill, 2019). Individuals who believe others impose unrealistic standards on them experience socially prescribed perfectionism (Hewitt & Flett, 1991), perceiving that others are unfairly judging and that the sole pathway to gaining others' approval is through perfection (Curran & Hill, 2019). Other-oriented perfectionism emerges when individuals impose unrealistic standards on others (Hewitt & Flett, 1991). This model is distinctive in its exploration of both intrapersonal and interpersonal facets of perfectionism (Curran & Hill, 2019).

Self-Oriented Perfectionism

In self-oriented perfectionism, individuals are motivated by a fear of failure and a relentless pursuit of perfection, making it a complex form of perfectionism that has been linked to achievement-oriented behaviours (Curran & Hill, 2019). College students exhibiting elevated

levels of self-oriented perfectionism demonstrate higher intrinsic motivation for studying, yet concurrently experience heightened worries and anxiety regarding examinations (Stoeber et al., 2009). These students tie self-worth to their achievement scores, a practice associated with adverse psychological outcomes and increased psychological distress (Curran & Hill, 2019; Juwono et al., 2022). Notably, college students with self-oriented perfectionism exhibit higher rates of depression and anorexia nervosa (Enns & Cox, 2005).

Other-Oriented Perfectionism

Perfectionism, particularly other-oriented perfectionism, has been linked to narcissism and antisocial personality characteristics (Juwono et al., 2022; Stoeber, 2015). In college students, individuals exhibiting other-oriented perfectionism demonstrated aggressive humour, uncaring traits, and a tendency toward individualism (Stoeber, 2015). Students exhibiting other-oriented perfectionism were less inclined to engage in prosocial behaviour or show concern for others' well-being (Stoeber, 2015). Stoeber (2015) classifies other-oriented perfectionism as a “dark” form of perfectionism, citing its association with malicious personality features (p. 611). Furthermore, research by Smith and colleagues (2016) reveals a positive correlation between other-oriented perfectionism and an unrealistic sense of superiority.

Socially Prescribed Perfectionism

Arguably, socially prescribed perfectionism is the most debilitating form of perfectionism. Perceived expectations from others are uncontrollable (Hewitt & Flett, 1991; Juwono et al., 2022). College students experiencing socially prescribed perfectionism demonstrate higher levels of anxiety and depression compared to their peers (Martin et al., 1996; Sherry et al., 2003). Furthermore, socially prescribed perfectionism is related to low self-esteem, low well-being, and higher psychological distress (Juwono et al., 2022; Stoeber, 2015), along

with negative affect, stress, guilt, frustration, anger, and negative self-evaluations when standards are not met (Egan et al., 2022). Socially prescribed perfectionism is unique as it can be linked to personal, relational, and societal outcomes (Flett et al., 2022). It can be a persistent source of pressure that induces intense feelings of helplessness and hopelessness (Flett et al., 2022) and is associated with social anxiety (Ferber et al., 2024). Individuals experiencing socially prescribed perfectionism are highly sensitive to rejection and profoundly self-conscious (Smith et al., 2016).

Comprehensive Model of Perfectionism Behaviour

In 2017, Hewitt et al. refined the trait model of perfectionism and introduced the Comprehensive Model of Perfectionism Behaviour (CMPB), which “conceptualizes perfectionism as a multifaceted and multilevel personality style that permeates most behaviour and has intertwined trait, self-presentational, and cognitive components” (Hewitt et al., 2022, p. 328). The CMPB includes perfectionistic self-promotion, non-display and non-disclosure of imperfection, and perfectionistic cognitions, which are internal expressions of the need to appear perfect, including self-directed dialogue, thoughts, and images (Hewitt et al., 2022). While all three components of the CMPB are considered important, the current paper primarily focuses on the Trait Model of Perfectionism (Hewitt & Flett, 1991).

Prevention of Perfectionism

Studies have shown that cognitive behavioral therapy (CBT) can effectively mitigate the negative effects of perfectionism (Galloway et al., 2022). During CBT, therapists focus on the interactions between thoughts, feelings, and behaviours (Corey, 2017). In the classroom, CBT can involve cognitive restructuring, which is facilitated by fostering a positive classroom culture, promoting authentic interactions, sharing experiences, bibliotherapy (storytelling or reading), engaging in art activities, and setting goals (Nugent, 2000). Cognitive behavioral therapy for

perfectionism teaches students to understand perfectionism, instills motivation for change, challenges beliefs, decreases self-criticism, and enhances self-compassion (Bendit, 2022). Classroom-based CBT and self-compassion programs have shown promise in reducing perfectionistic tendencies and improving well-being (Vekas & Wade, 2017; Osenk et al., 2023).

Interventions for college students include CBT, Acceptance and Commitment Therapy to address unhelpful beliefs using value work, person-centred approaches, and group therapy. Evidence suggests that fostering growth mindsets (the perspective that ability can grow or change with effort) among students can act as a protective factor against certain types of perfectionism (Lin & Muenks, 2022). Currently, the suitability of online interventions for addressing perfectionism in college students is also under investigation (Suh et al., 2019). In their review of current interventions, Suh et al. (2019) observed that these interventions typically lasted around 8 weeks and showed effectiveness in reducing dimensions of perfectionism, depression, and anxiety. Visvalingam and colleagues (2022) examined the effectiveness of an online intentional imperfection program for university students. This program, guided by the Perfectionism Social Disconnection model, taught students mindfulness, compassion, and self-compassion (Visvalingam et al., 2022). Students reported that mindfulness meditations, self-compassion strategies, and distress tolerance activities were most helpful (Visvalingam et al., 2022). Researchers noted a significant reduction in perfectionism, rejection sensitivity, hostility, depression, and anxiety symptoms (Visvalingam et al., 2022). Further research is necessary to validate these findings and explore effective interventions to mitigate perfectionism among gifted individuals (Corson et al., 2018; Jen, 2017).

Understanding perfectionism's multidimensional nature is essential for developing effective interventions. Addressing both adaptive and maladaptive aspects can help individuals

enhance perfectionism's positive qualities while mitigating its negative impacts. Future research should continue to explore comprehensive models and interventions to support individuals across the lifespan.

Prevention of Perfectionism in Youth

Several studies have focused on reducing perfectionism in children. Nobel and colleagues (2012) argue that addressing perfectionism in children is more effective because their personalities and sense of self are still developing, making them prime candidates for successful preventative interventions. This is supported by the findings on personality development throughout childhood (Slobodskaya, 2021). Various interventions have been evaluated for children in classroom settings. For instance, a 1.5-hour weekly CBT program for students in grades 3 to 6 significantly reduced self-oriented perfectionism after 12 weeks (Nobel et al., 2012). Another study examined a two-lesson school-based intervention for pre-adolescent children, revealing differences in self-oriented perfectionism-striving post-intervention and at follow-up (Fairweather-Schmidt & Wade, 2015). Subsequently, Vekas and Wade (2017) explored the efficacy of a three-lesson self-compassion program delivered by researchers to 10-12-year-olds exhibiting perfectionistic tendencies, showing that the effects of self-compassion persisted during follow-up. Building on these findings, another study found that students with high perfectionistic concerns had lower levels of perfectionistic striving at the 3-month follow-up, with better well-being outcomes in the intervention group (Osenk et al., 2023). A researcher-led 2-hour presentation, followed by 5 weeks of teacher-led lessons, indicated potential benefits for teacher-led interventions (Osenk et al., 2023). Moreover, a 6-week mindfulness program for middle school students, consisting of 45-minute weekly sessions with presentations, activities, and homework, significantly decreased self-oriented perfectionism (Olton-Weber et al., 2020).

Self-compassion benefited students engaging in negative perfectionistic tendencies after 3 weeks (Woodfin et al., 2021). These studies underscore the importance of early intervention to mitigate the negative impacts of perfectionism (Corson et al., 2018; Magson et al., 2019). Despite preliminary support for perfectionism interventions among youth, further research within this demographic is warranted (Fairweather-Schmidt & Wade, 2015).

Various researchers have proposed affective (emotion-focused) interventions to prevent perfectionism in young people. Corson et al. (2018) suggest that such interventions may be beneficial because they teach children relevant coping skills for managing stressful situations. Fillmore (2018) holds that affective interventions may have both treatment and preventative effects. Regardless of the approach taken in future interventions, Egan and colleagues (2022) emphasize the significance of integrating young people's experiences into the process of developing effective strategies.

Academic Achievement and Perfectionism

While the positive qualities of perfectionism, such as high achievement and strong drive, can obscure its negative consequences, perfectionism itself does not appear to lead to higher academic success (Endleman et al., 2022). Endleman and colleagues (2022) found that students with high academic achievement often exhibit perfectionistic tendencies, but targeting these tendencies to reduce their negative impacts does not necessarily lower academic performance. Students with high academic achievement tended to exhibit self-oriented perfectionism and socially prescribed perfectionism but students with perfectionistic tendencies were no more likely to achieve high academic success (Endleman et al., 2022). Perfectionism itself does not appear to lead to higher academic achievement. This suggests that while high academic achievers may develop perfectionistic tendencies in an effort to maintain their grades, targeting

perfectionism to reduce its negative psychological impacts will not necessarily decrease students' academic performance.

Perfectionism in Children and Adolescents

Children and adolescents exhibit similar perfectionistic traits as adults, with self-oriented perfectionism and socially prescribed perfectionism linked to depression and anxiety (Endleman et al., 2022; Hewitt et al., 2002; Hong et al., 2017). Socially prescribed perfectionism further correlates with social stress, anger (Hewitt et al., 2002), and behavioural and peer problems (Melero et al., 2020). Among adolescents experiencing chronic pain, individuals with socially prescribed perfectionism have more sleep difficulties, especially those with less functional disability (Clementi et al., 2021). It appears that self-oriented perfectionism could potentially be a risk factor for the development of body dysmorphic disorder in youth (Krebs et al., 2019) and increases the possibility of developing emotional difficulties (Melero et al., 2020). Aspects of maladaptive perfectionism are transdiagnostic for depression, anxiety, and eating disorders in adolescents (Johnston, 2017).

Children as young as nine experience maladaptive factors of socially prescribed perfectionism, which predict internalizing problems and can contribute to adjustment difficulties for up to two years (Hong et al., 2017). Correlations have also been found between children exhibiting self-oriented perfectionism and socially prescribed perfectionism and social disconnection, interpersonal difficulty, rejection sensitivity and anxiety, depression, and eating disorders (Magson et al., 2019). Research indicates that approximately two-thirds of elementary students (7-11 years) and adolescents (13-14 years) demonstrate signs of high perfectionism (Melero et al., 2020; Stornaes et al., 2019). Signs of perfectionism in children include unrealistically elevated expectations, early frustration when making mistakes, procrastination, or

avoidance of activities the child believes are difficult, repeating assignments if they are not perceived as just right, self-consciousness, low self-esteem, and meltdowns when receiving criticism (Lear, 2021). Early interventions targeting these traits may be effective, given that children's personalities and senses of self are still developing (Nobel et al., 2012).

Considering the early development of perfectionism, researchers aim to advance understanding of developmental pathways of perfectionism in children. Aspects that may foster the development of perfectionism in children include parental factors, child factors, and attachment style (Morris & Lomax, 2014). For instance, perfectionism may be a maladaptive coping strategy that children use to help them self-soothe when their parents are inconsistent with expectations (Stoeber, 2018). Morris and Lomax (2014) contend that 'pushy parenting' is associated with socially prescribed perfectionism and self-oriented perfectionism for children. During a longitudinal study, researchers followed children at ages 7, 8, 9, and 11, incorporating reports from parents, children, and observational data (Hong et al., 2017). Findings suggest that parental intrusiveness and negative parenting predicted self-oriented perfectionism concerns for children (Hong et al., 2017). Additionally, there may be aspects of intergenerational transmission that contribute to the development of perfectionism (Morris & Lomax, 2014).

Regulating Strategies

To address the rise in perfectionism among individuals, this discussion focuses on three key regulatory strategies: ER, compassion, and self-compassion. Research indicates that these strategies are negatively correlated with perfectionism and may help mitigate perfectionistic tendencies.

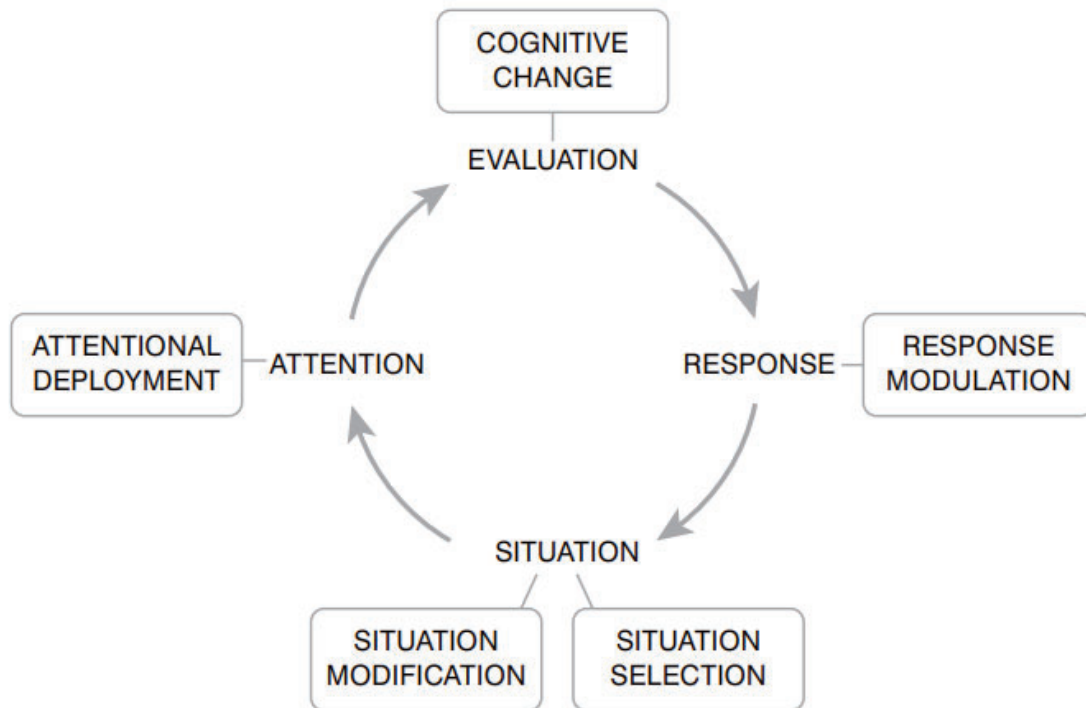
Emotional Regulation

The development of ER strategies contributes to resilience and is known to help individuals respond to physical and psychological stress (Fredrickson et al., 2008). Several prominent theories of ER exist, including the process model proposed by Gross (1998), Fredrickson's Broaden and Build model (2001), and techniques such as cognitive reappraisal (Gross & John, 2003). Eisenberg and colleagues (1998) further explore how children develop ER skills through caregivers.

Gross (1998) states that ER encompasses any effort to modify an emotional experience (see also Gross, 2024). In contrast, emotional dysregulation refers to the inability to manage emotions effectively, which can have profound implications, such as depression or anxiety (Daros et al., 2021). Emotional dysregulation happens when strategies are poorly chosen for the current situation, chosen correctly but poorly executed, or not used in a situation when regulation would be beneficial (Gross, 2024). Gross' model (1998) delineates five families of regulatory processes surrounding four stages through which emotions develop: situation, attention, evaluation, and response (see Figure 1; Gross & Ford, 2024).

Figure 1.

Gross' Process Model Depicting the Five Families and Four Stages of Emotional Regulation



Note. From Handbook on Emotion Regulation (3rd ed) (p.8), by J. J. Gross and B. Q. Ford (eds), 2024, The Guilford Press. © 2024 by The Guilford Press. Reprinted with permission.

These strategies can be classified into two types based on their timing relative to the activation of a full emotional response: antecedent-focused strategies and response-focused strategies (Gross & Thompson, 2007). Antecedent-focused strategies, such as reappraisal or attention shifting, are implemented before a significant emotional response manifests (Gross & Thompson, 2007; Rice et al., 2017). Conversely, response modification is a response-focused strategy aimed at modulating emotional responses that have already occurred (Gross & Thompson, 2007). Examples of response-focused strategies include avoidance or suppression of emotions (Rice et al., 2017).

Emotional regulation strategies can be either adaptive (reappraisal) or maladaptive (rumination; Aldao et al., 2010). Maladaptive strategies can be beneficial; however, the benefits are often insignificant in comparison to the consequences. Avoiding situations (social cost) that evoke undesired emotions restricts one's activities and prevents learning how to cope, while ruminating (cognitive cost) involves repeatedly thinking about a problem without seeking a solution (Riediger, 2024). Adaptive strategies include positive reappraisal, which involves finding the positive aspects of a difficult situation, and nonjudgmental acceptance, which entails embracing one's emotions without self-evaluation (Riediger, 2024). Similarly, Barbara Fredrickson's theory of ER (2001) emphasizes the importance of consistent positive emotions, highlighting how these adaptive strategies can foster resilience and well-being.

Fredrickson's theory strongly underscores the role of consistent positive emotions in fostering an upward spiral, enhancing cognitive flexibility and behaviour patterns, and demonstrating the interplay among emotional, cognitive, and behavioural factors. Moreover, frequent experiences of positive emotions can bolster social connections and overall health (Fredrickson, 2001). This theory does not negate the occurrence of negative emotions but rather emphasizes the importance of maintaining a balance between positive and negative affect. Frequent experiences of negative emotions without a counterbalance of positive ones can detrimentally impact well-being (McCraty et al., 1998; McCraty & Zayas, 2014).

Emotional regulation is a crucial skill that begins to develop during childhood (Tottenham, 2024). Eisenberg and colleagues (1998) outline a model centred on how caregivers teach children about emotions and appropriate emotion management. This model proposes that caregivers enhance children's ER skills through three primary methods: (1) socializers' own emotional expressions, (2) socializers' responses to children's emotions, and (3) socializers'

discussions of emotions with children (Eisenberg, 2020). Valiente and colleagues (2020) suggest that the social and emotional functioning of teachers and peers, their emotion-related interactions (such as reactions to emotions and relationship quality), and the classroom environment are crucial factors in ER.

Due to the multifaceted nature of the process, it takes approximately two decades for ER to fully develop (Tottenham, 2024). Children and adolescents require tools to navigate their developmental changes effectively. Teaching ER strategies to students promotes development, enhances academic performance, and reduces maladaptive behaviour (Feist et al., 2016). Social-emotional skills are acquired through interactions with their teachers (Alzahrani et al., 2019). Teaching ER involves modelling the process, providing students with the tools and time to practice, and establishing routines that create space for emotions and their regulation (Hoffman & De France, 2024), all of which facilitates academic success (Alzahrani et al., 2019; Denham et al., 2012; Graziano et al., 2007; Safeer et al., 2022). Proficient ER can enhance classroom engagement, whereas poor ER correlates with reduced engagement, lower academic outcomes (Denham et al., 2012), and maladaptive behaviours (Alzahrani et al., 2019). Graziano and colleagues (2007) discovered that kindergarten children who effectively regulated their emotions demonstrated higher levels of cognitive development, independent learning behaviour, and academic success in the short and long term. Emotional intelligence significantly enhances student achievement, providing them with tools to manage stress and cultivate healthy relationships (Sheela, 2023). Children contending with ER difficulties often struggle to learn effectively in classrooms and experience reduced productivity (Graziano et al., 2007). These students may encounter challenges in understanding and identifying their emotions, leading to the development of aggressive problem-solving patterns and negative emotional expression

(Denham et al., 2012). Many teachers report insufficient support or inadequate training to offer quality ER education (Reinke et al., 2011), and Hoffman and De France (2024) suggest both personal and professional development training for teachers, to address this issue.

Emotional regulation is beneficial in decreasing psychological distress (Daros et al., 2021; Guerrini-Usubini et al., 2023). Through meta-analysis, Daros and colleagues (2021) recognize that improved engagement in ER, with less dysregulation, was associated with lower anxiety and depression in youth. In female survivors of interpersonal trauma, researchers witnessed a pathway through which ER developed throughout a 6-week curriculum involving mindfulness, compassion, and loving-kindness meditation practices (Lee et al., 2022). Participants became increasingly aware of their emotions and worked on accepting and letting go of them, which resulted in emotional growth and enhanced self-regulation (Lee et al., 2022). Emotional regulation fosters compassionate accountability by enabling individuals to recognize and understand their emotions, thereby allowing them to see how these emotions influence their thoughts and behaviours. Individuals who struggle with compassion can have difficulties with ER (Sher et al., 2024).

Compassion

Compassion, as defined in the literature, comprises “a response to suffering that involves cognitive awareness, empathy, and action to alleviate suffering” (Addiss et al., 2022, p. 2). It requires the recognition and desire to alleviate another’s pain (Schabram & Heng, 2022). Corresponding emotions include sympathy, empathy, and pity (Schabram & Heng, 2022). To date, compassion research has mainly focused on the effects of receiving compassion from others, and findings indicate that compassion from others reduces anxiety and increases feelings of being valued (Dutton et al., 2014). Recent research focuses on the benefits for the ‘giver’ of

compassion, such as replenishment after burnout (Schabram & Heng), creating a positive image (Melwani et al., 2012), more acceptance of social support (Cosley et al., 2010), and recovery from suicidal ideation in college students (Allegro, 2022). Compassion-focused therapy (CFT) encourages individuals to cultivate compassion, and was developed for individuals who experience high shame and self-criticism, due to their interference within the therapeutic process (Tirch & Gilbert, 2015).

Increasingly, CFT has been evaluated for its effectiveness in treating a multitude of disorders (Gilbert, 2009), including sexual deviance (Hocken & Taylor, 2021), anxiety and depression (Navab et al., 2019; Noorbala et al., 2013; Wilson et al., 2019), substance disorders (Carlyle et al., 2019), borderline personality disorder (Feliu-Soler et al., 2017), eating disorders, (Duarte et al., 2017; Kelly & Waring, 2018), dementia (Collins et al., 2018), and schizophrenia (Braehler et al., 2013). It is effective for both inpatients and outpatients (Braehler et al., 2013; Cuppage et al., 2018). Collins and colleagues (2018) examined a program aimed at couples experiencing dementia, emphasizing compassion. They observed improvements in quality of life, as well as reductions in depression and anxiety for both diagnosed individuals and their spouses (Collins et al., 2018). Additionally, Feliu-Soler et al. (2017) found that compassion and loving-kindness training, when combined with mindfulness practice, facilitated acceptance among individuals experiencing borderline personality disorder. However, although Wilson and colleagues (2019) noted improvements when reviewing the effectiveness of CFT in fostering compassion while reducing psychopathy, they did not find conclusive evidence supporting CFT over other conventional therapies (Wilson et al., 2019).

Compassion-focused therapy is a branch of CBT and is centred on motivation, aiming to teach individuals to stimulate affiliative emotions and motives connected with compassion

(Hocken & Taylor, 2021). It is an integrative approach that draws from various theories, including Buddhism; evolutionary, social, and developmental psychology; and neuroscience (Gilbert, 2009). Ultimately, the purpose of the approach is to help individuals shift to a more caring perspective toward themselves and others (Hocken & Taylor, 2021).

Research on compassion has indicated promising effects for both the giver and the receiver. Within schools, compassion-based initiatives can help students understand compassion, recognize how embracing a compassionate mind influences their behaviour, and can help them to better regulate their emotions (Welford & Langmead, 2015). The proposed research herein aims to harness compassion to help students regulate their emotions and engage a compassionate mindset.

Self-Compassion

Feelings of sympathy or empathy toward others are characteristic of compassionate individuals (Schabram & Heng, 2022). While self-compassion and compassion for others share similarities, they are distinct, yet positively correlated constructs (Schabram & Heng, 2022). Self-compassion, in essence, entails “feeling forgiveness for oneself,” and Dr. Neff identifies three fundamental principles underlying self-compassion: kindness, common humanity, and mindfulness (Neff, 2003). Individuals practicing self-compassion engage in these principles instead of giving into self-judgement, feeling alone in making mistakes, or over-identifying with thoughts (Neff, 2003). Compassion for the self is as crucial as compassion for others (Galiana et al., 2022).

Individuals practicing self-compassion are kind and understanding toward themselves, recognizing that humans are not perfect beings and that making mistakes is a shared common experience (Neff, 2003). Self-compassion entails a caring attitude towards the self in the face of

failures and individual shortcomings (Zessin et al., 2015), and maintaining a balanced awareness of our thoughts is crucial to limiting self-judgement and over-identification (Neff, 2003). For example, after making a mistake, instead of thinking, ‘I cannot do anything right,’ an individual practicing self-compassion might think: ‘I am a human who makes mistakes.’ Over-identifying with thoughts (e.g., making a mistake = “I am a failure”) becomes dangerous when individuals are self-critical because it can lead to rumination and feelings of inadequacy (Neff, 2003).

The link between self-compassion and well-being is robust (Phillips & Hine, 2021; Zessin et al., 2015). Through meta-analysis, Zessin and colleagues (2015) established a causal relationship between self-compassion and well-being, but the impact was more pronounced on cognitive and psychological well-being relative to affective well-being. Mental health, physical health, and interpersonal relationships are all positively impacted by self-compassion (Neff, 2022), particularly in terms of functional immunity, sleep quality, and danger avoidance (Phillips & Hine, 2021). Given the link between self-compassion and mental health concerns (e.g., suicidality and anxiety), self-compassion serves as a predictor of psychological health (Phillips & Hine, 2021; Van Dam et al., 2010). Individuals who frequently engage in self-compassion, and compassion for others, report a higher quality of life (Craig et al., 2020; Van Dam et al., 2010).

People often admit to being more compassionate with others than themselves (Neff, 2003). Those practicing self-compassion do not “harshly criticize the self for failing to meet ideal standards” (Neff, 2003, p. 87). Practicing compassion for the self increases compassion toward others, leads to intrinsic care, stronger motivations for growth, and serves as an emotional coping strategy (Neff, 2003). Compassion toward self and others reduces the risk of burnout by fostering a sense of belonging and increasing self-control, respectively (Román-Calderón et al.,

2022; Schabram & Heng, 2022). Schabram & Heng (2022) suggest that self-compassion, and compassion for others, alleviate distinct dimensions of burnout, noting that “self-compassion remedies exhaustion, and other-compassion remedies cynicism” (p. 453). Supporting this theory, analyses found that self-compassion was negatively correlated with emotional exhaustion in medical students, while compassion had a negative relationship with the depersonalization of patients (Román-Calderón et al., 2022). Therefore, fostering both self-compassion and compassion for others is essential for promoting overall well-being and preventing burnout.

Practicing self-compassion helps individuals engage in a psychological process called cognitive reframe, allowing for post-traumatic growth and healing (Munroe et al., 2022). Cognitive reframing enables individuals to view experiences from multiple perspectives. Through self-compassionate practices, individuals who have endured adverse experiences, such as those victimized by sexual assault (Hamrick & Owens, 2019), domestic violence (Allen et al., 2017), and prejudice (Vigna et al., 2018), develop resilience and report less self-blame. A systematic review revealed that the most successful, brief, self-compassion interventions, typically span at least 12 hours total (Craig et al., 2020). Nonetheless, shorter interventions demonstrate significant effects in certain domains, including self-reassurance and happiness (Ascone et al., 2017), as well as reductions in negative thoughts and emotions, with sustained improvements observed during follow-ups (Arimitzu, 2016).

In adolescents, self-compassion shows a negative correlation with depression (Wang & Wu, 2024; Yeo et al., 2023). Among junior high students with high neuroticism, self-compassion modulated the relationship between neuroticism and depression (Wang & Wu, 2024). A meta-analysis investigating self-compassion in adolescents has also highlighted associations with decreased levels of psychological distress (Marsh et al., 2018). Regrettably, self-compassion

tends to be lower among sexual and gender minority youth (Vigna et al., 2018). Despite self-compassion potentially serving as a protective factor, Vigna and colleagues (2018) found that bullying undermines these effects, emphasizing the need for further evidence to determine the clinically meaningful protective roles that self-compassion might fulfill (Suh & Jeong, 2021).

Self-Compassion and ER in Students

Self-compassion plays a crucial role in ER by fostering healthy self-regulation (Dundas et al., 2017; Munroe et al., 2022; Wang & Wu, 2022). Self-regulation, an aspect of inhibitory control, manages thoughts, behaviour, attention, and emotions (Diamond, 2013). Executive functions contribute to emotional regulatory processes (Koay & Van Meter, 2023). Emotional regulation involves using strategies to influence emotions, allowing individuals to flexibly adjust to internal and external demands (Koay & Van Meter, 2023). Studies have shown that adaptive ER strategies, such as reappraisal, are associated with better executive functioning (Koay & Van Meter, 2023; Lantrip et al., 2016).

Self-compassion may have protective effects against emotional dysregulation during youth (Bluth et al., 2017), as lower levels of self-compassion can lead to difficulties with ER (Sher et al., 2024). As noted previously, early childhood well-being, accomplishment, and emotional self-regulation form the basis for future social, emotional, and academic development (See: Bradley et al., 2012; Daros et al., 2021). Graziano and colleagues (2007) discovered that ER skills in kindergarteners facilitated cognitive processing and independent learning behaviours, which are crucial for academic motivation and success. Teaching children and youth ER strategies as they explore and manage their emotions positively influences their academic journey (Alzahrani et al., 2019; Denham et al., 2012; Graziano et al., 2007; Safeer et al., 2022).

Regulating Strategies and Perfectionism

Compassion, both towards oneself and others, is essential in countering perfectionism. It involves directing understanding and kindness towards oneself when facing difficulties, rather than harsh self-criticism. Practicing compassion can help individuals acknowledge their imperfections and view mistakes as part of the human experience, thereby reducing the harmful effects of perfectionism. Individuals experiencing perfectionism tend to be directed by negative affect (fear of failure; feelings of inadequacy, shame, or guilt; anxiety about achieving often unachievable outcomes), and thus may not respond to emotional experiences in a healthy way.

Compassion and Perfectionism

Self-compassion, a promising approach with an expanding evidence base confirming its efficacy (Fletcher et al., 2019), is useful in countering the effects of maladaptive perfectionism. While further experimental and intervention research is necessary to thoroughly evaluate this possibility (Ferrari et al., 2018), researchers advocate that interventions for perfectionism should encompass self-compassion (Adams et al., 2022). By promoting the mindset that one's self-worth is not tied to accomplishments or results (Finlay-Jones, 2017), self-compassion could be psychologically beneficial in addressing the various dimensions of perfectionism (Kawamoto et al., 2023).

It is reasonable to assume that both self-compassion and compassion for others could serve as protective factors against various aspects of perfectionism. Indeed, studies suggest a negative correlation between self-compassion and maladaptive perfectionism (Dundas et al., 2017; Ferrari et al., 2018; Malivoire et al., 2019; Suh & Chong, 2022). Elevated personal standards predict lower levels of self-compassion, including increased self-judgement, feelings of isolation, and over-identification (Daniilidou, 2023). As mentioned earlier, a direct negative

association exists between perfectionism and self-compassion, and an indirect association is affected further by recurrent negative thoughts (Neshat et al., 2024). Compassion interventions target maladaptive facets of perfectionism, such as self-criticism, while preserving the aspirational aspects of perfectionism (Woodfin et al., 2021). Self-compassion is positively associated with personal initiative and achievement standards (Dundas et al., 2017; Suh & Chong, 2022), suggesting that practicing self-compassion may lead to higher achievement. Adaptive perfectionists generally exhibit higher levels of self-compassion and experience more favourable mental health outcomes compared to their maladaptive counterparts (Daniilidou, 2023).

Self-compassion holds a crucial position in the relationship between perfectionism and psychological distress (Koutra et al., 2023). It acts as a buffer, mitigating the adverse impacts of anger and distress associated with perfectionism (Abdollahi et al., 2022; Adams et al., 2022; Ferrari et al., 2018). Individuals facing other-oriented perfectionism and socially prescribed perfectionism, coupled with low self-compassion, tend to experience heightened levels of anger and hostility (Abdollahi et al., 2022). Self-compassion mitigates the association between perfectionism and depression (Ferrari et al., 2018; Mehr & Adams, 2016; Wei et al., 2021), and low self-compassion among individuals experiencing maladaptive perfectionism serves as a facilitator for symptoms of bipolar disorder (Fletcher et al., 2019). Low levels of self-compassion increase the negative impact of perfectionism on well-being, predisposing college students to burnout (Pereira et al., 2022). Kawamoto et al. (2023) acknowledge self-compassion as an intermediary in explaining the differences between adaptive and maladaptive perfectionism across depression, anxiety, and academic distress. Furthermore, components of self-compassion, such as self-kindness and mindfulness, mediate the association between life satisfaction and

maladaptive perfectionism (Wang & Wu, 2022). This mediating role may stem from self-compassion's function as an adaptive emotion-focused strategy for navigating emotional distress, enabling individuals to observe personal imperfections with mindful awareness, and objectively recognize that imperfections are inevitable (Wang & Wu, 2022).

Training in self-compassion, and compassion for others, is increasingly prevalent, with compassion-focused interventions gaining traction in both scholarly literature and practical application (Neff, 2022; Wakelin et al., 2022a). The positive impact of self-compassion training on well-being is well-documented (Ferrari et al., 2019; Wilson et al., 2019). Evidence indicates interventions targeting compassion have been effective among university students (Arimitsu, 2016; Dundas et al., 2017), individuals in inpatient and outpatient psychiatric settings (Ascone et al., 2017; Feliu-Soler et al., 2017), individuals with eating disorders (Duarte et al., 2017; Kelly et al., 2017), those experiencing social anxiety (Stevenson et al., 2019), women athletes (Mosewich et al., 2013), and the general population (Krieger et al., 2019; Shahar et al., 2015).

Various interventions focused on self-compassion have demonstrated effectiveness in reducing self-critical perfectionism and associated psychological distress. Wimberley and colleagues (2016) evaluated the efficacy of a compassionate mindfulness-based bibliography approach in diminishing self-critical perfectionism without compromising personal standards. Participants read *Present Perfect* by Pavel Somov (2010), a book designed to instruct readers on employing mindfulness techniques to alleviate maladaptive perfectionism (Wimberley et al., 2016). Cuppage and colleagues (2018) share a multimodal approach that targets elevated levels of shame and self-criticism. A preliminary investigation examining the efficacy of a self-compassion-based intervention for binge eating demonstrated reductions in self-criticism and psychological distress (Duarte et al., 2017). Interventions promoting self-compassion have

proven effective in managing self-criticism, rumination, and concerns over mistakes (Mosewich et al., 2013). A case study of a 28-year-old individual diagnosed with depression and exhibiting strong features of shame, self-criticism, and perfectionism observed positive effects from 12 sessions of CFT (Matos & Steindl, 2020). Following a 2-week online compassion intervention, self-criticism significantly decreased, with moderate reductions maintained at follow-up (Wakelin et al., 2022b). It is suggested that longer interventions may yield greater reductions in self-criticism (Wakelin et al., 2022a). A 6 week, 2-hour compassion mind training intervention led to diminished self-criticism (Noorbala et al., 2013), while a 2-week self-compassion course resulted in reduced self-judgement and habitual self-directed thinking, persisting at a 6-month follow-up (Dundas et al., 2017).

The affect regulation system is often inaccessible in people with high shame and self-criticism (Gilbert, 2009). However, due to the significant role self-compassion plays in ER, it may serve as a key to unlock the affect regulation system for individuals with high shame and self-criticism. This intriguing possibility suggests that interventions that promote self-compassion and reduce self-criticism and shame could be particularly beneficial for adults with perfectionistic tendencies (Koutra et al., 2023).

ER and Perfectionism

In perfectionism research, the regulation of emotions holds significance (Woodrum & Kahn, 2022). Individuals harbouring perfectionistic thoughts tend to exhibit maladaptive ER tendencies (Fletcher et al., 2019; Rezaeisharif et al., 2021; Richardson et al., 2014), such as a deficiency in positive reappraisal (Rudolph et al., 2007), low emotional awareness (Malivoire et al., 2019), and diminished trait emotional intelligence (Smith et al., 2015). Stoeber (2018) even suggests that perfectionism becomes maladaptive once coupled with inadequate ER skills. Dobos

and colleagues (2021) discovered that emotional dysregulation was the strongest predictor for the development of perfectionism in college students. Emotional regulation plays a role in the correlation between perfectionism and positive affect (Castro et al., 2017), as maladaptive perfectionists may undergo heightened negative affect (Malivoire et al., 2019). Furthermore, maladaptive ER strategies mediate the relationship between perfectionistic concerns and distress (Woodrum & Kahn, 2022). Contextual schema therapy enhances ER while concurrently diminishing symptoms of perfectionism (Abbady, 2023; Sohrabi et al., 2023).

Research also indicates a connection between maladaptive perfectionism and poor ER skills among children (Affrunti et al., 2016; Vicent et al., 2022). Self-reported perfectionistic concerns were found to correlate to parental-reported behavioural cues, indicating a child's insufficient emotional management (Affrunti et al., 2016). Vicent et al. (2022) caution that children experiencing greater perfectionism may be at a heightened risk of developing poor ER strategies. Further research, including interventions that target the emotional regulatory features of clients' perfectionistic tendencies, may prove beneficial (Aldea et al., 2006).

ER and HeartMath

HeartMath interventions use simple techniques to slow breathing in order to regulate and increase positive emotions, such as love and compassion, with the aim of enhancing coherence across the body's systems (McCraty et al., 1998; McCraty et al., 2009; McCraty & Shaffer, 2015). Coherence is indicated by smooth, sine wave-like patterns in heart rhythms (McCraty & Shaffer, 2015). By fostering positive emotions, these interventions can synchronize neurological systems, a concept known as *psychophysiological coherence* (McCraty, 2005). HeartMath interventions combine ER training with Heart Rate Variability (HRV) technology to increase psychophysiological coherence. This approach, known as Heart Rate Variability Coherence

Biofeedback (HRVCB) training, has shown potential for reducing stress and improving academic performance (Bearden et al., 2023; McCleod & Boyes, 2021). Although research on HRVCB is gaining traction, further studies are needed to understand its effectiveness in elementary and middle school-aged children. Unfortunately, measuring HRV for all students is time-consuming, which diminishes the appeal for educators and schools to allocate class time for research purposes.

In terms of coherence and its influence on learning, it is important to recognize that the learning process encompasses physical, mental, and emotional dimensions (Holmes, 2019). Stress and negative emotions create "inner noise" for students, leading to behavioural and cognitive issues that can hinder learning (McCraty, 2005, p. 130). Specifically, stress and emotional dysregulation disrupt the nervous system (physical), which then "inhibits higher cognitive processes" essential for effective learning (McCraty, 2005, p. 130). Achieving a state of psychophysiological coherence enhances cortical facilitation, leading to improved cognitive functioning (McCraty et al., 2009). The coherence resulting from slower breathing modifies the brain and leads to enhanced awareness, cognition, and stress management (Sevoz-Couche & Laborde, 2022).

HeartMath ER techniques have been successfully used in schools to address a range of emotional and behavioural challenges (Aranberri-Ruiz et al., 2022; Bearden et al., 2023; McLeod & Boyes, 2021). Numerous studies have been conducted with university students (May et al., 2019; Shahirah Sha'ari & Amin, 2021; Sufian & Kamal., 2021). May and colleagues (2019) found HeartMath to be beneficial against burnout, while Shahirah Sha'ari and Amin (2021) used HeartMath to build resilience. In primary school settings, these techniques are known to reduce anxiety and stress (Aranberri-Ruiz et al., 2022) while improving academic performance

(McLeod & Boyes, 2021). Aranberri-Ruiz and colleagues (2022) evaluated the suitability of a HeartMath breathing intervention with HRV feedback among students aged 7 to 11 years in school settings. Students participated in a 15-minute individual session per week, conducted outside of the classroom in a quiet location. The students used HeartMath technology to learn to breathe at approximately six breaths per minute. The study compared the outcomes of the breathing activity with those of a control group of students who did not receive the intervention training. Results indicated that the breath work helped reduce social stress and anxiety symptoms among students.

HeartMath programs teach ER to young children in schools, allowing them to learn how to manage their emotions, interact socially, and think more clearly. For example, in Ireland, a HeartMath Safe Place Program was launched with the aim of reducing conduct problems and hyperactivity in children while also fostering prosocial behaviour (Connelly, 2009). The results showed a decrease in conduct issues, hyperactivity, and emotional symptoms, along with an increase in prosocial behaviour.

Over 20 years of research have demonstrated the positive impact of HeartMath interventions in schools, with results spanning various age groups. However, most of this research has been conducted with high school and university students, indicating a need for more studies focusing on younger children and elementary school settings. Among older students, McLeod and Boyes (2021) investigated the efficacy of HeartMath interventions in high school as part of an evaluation of educational programs incorporating social-emotional learning. Students in the intervention program received instruction in mindful breathing, ER techniques, study and test-taking skills, and coping strategies (McLeod & Boyes, 2021). Findings revealed that the

program led to enhancements in positive affect, academic achievement, self-efficacy for test taking, and reductions in anxiety related to social stress (McLeod & Boyes, 2021).

Due to chronic negative affect, maladaptive perfectionism reduces HRV in academically gifted individuals (Corson et al., 2018). During mindfulness practice, HRV is lower for maladaptive perfectionists (Azam et al., 2015). These findings suggest that HeartMath techniques that increase HRV and coherence through ER and positive affect may counteract this physiological effect of maladaptive perfectionism, helping students with the skill to succeed academically while maintaining mental wellness.

Heart Lock-In

The HLI technique is an emotional restructuring approach utilizing Heart Focused Breathing (HFB) to enhance HRV (HeartMath Institute, 2016). This technique is comprised of three straightforward steps:

- 1) begin by focusing on the heart and engaging in HFB, regulating into a more coherent state (McCraty & Zayas, 2014);
- 2) activate positive emotions such as love or compassion;
- 3) radiate these regenerative feelings towards oneself and others (HeartMath Institute, 2016).

Originally tested by McCraty and colleagues in 1998, the technique involved an experimental group generating and sustaining a positive emotional state for 30 minutes each weekday, over a 4-week period, as compared to a control group. The technique was coupled with a similar approach called the Cut-True method, where individuals observe their inner state, focus on their heart, consciously cultivate feelings of inner calm, revisit their initial feelings about a situation, and then generate feelings of positivity and understanding (McCraty et al., 1998). The combined techniques successfully reduced cortisol levels and negative affect, while boosting

levels of dehydroepiandrosterone (DHEA) hormones and positive affect, resulting in increased HRV coherence levels. This study shows the effectiveness of this intervention in reducing physiological desynchronization.

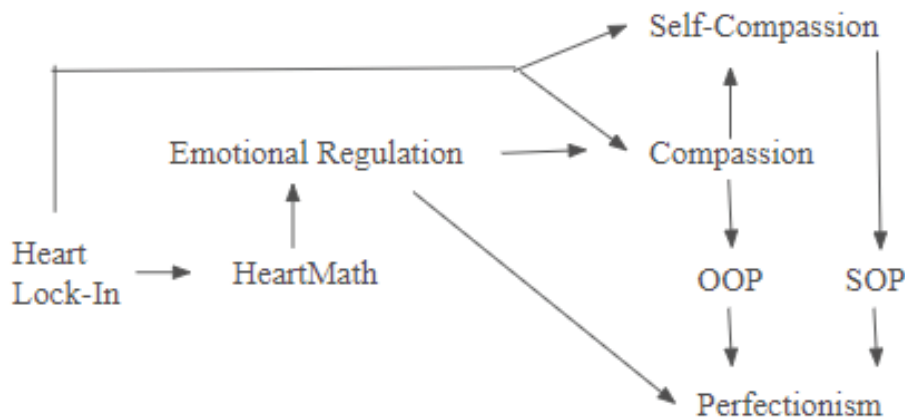
A recent study assessed the effectiveness of HLI implementation in the classroom (Bearden et al., 2023). Bearden and colleagues (2023) measured elementary students' self-reported ER skills before and after practicing HLI with biofeedback. In this repeated-measures study, students engaged in a relaxation control activity, colouring, followed by a 5-minute daily HLI session led by their teacher over 4 weeks (Bearden et al., 2023). Practicing HLI regularly targets antecedent-focused ER because frequent practice creates new pathways in the brain through which individuals deploy their attention when assessing situations and the resulting appraisal. This allows for regulation to occur before an overwhelming emotional response. Heart Lock-In can regulate the nervous system before reappraising the situation during a triggering emotional response. Students self-reported improvements such as enhanced emotional stability, feeling more positive about themselves, and improved interpersonal relationships (Bearden et al., 2023).

As an ER technique, HLI has perfectionism prevention qualities. Dysregulation is the strongest predictor of the development of perfectionism in college students (Dobos et al., 2021). Heart Lock-In promotes ER while increasing HRV, which is reduced in individuals exhibiting maladaptive perfectionism (Corson et al., 2018). Furthermore, as individuals cultivate feelings of love, appreciation, and compassion towards themselves, their self-compassion increases. Similarly, compassion expands as individuals direct feelings of love and appreciation toward others. As students' self-compassion and compassion for others grow, their tendencies towards self-oriented perfectionism and other-oriented perfectionism thoughts should diminish due to the

decrease criticism towards the self and others. While teaching this method to young children is feasible (Aranberri-Ruiz et al., 2022), research on HeartMath interventions in elementary classrooms remains insufficient. It is crucial to explore strategies, such as HeartMath, that foster ER and compassion in classroom settings.

Figure 2

Connections Between Constructs



Note. Heart Lock-In in relation to ER, Compassion, and Perfectionism.

Given the gaps in the literature on effective tools for reducing the harmful effects of perfectionism, the role of ER and self-compassion in mitigating perfectionism requires further exploration. Additionally, there is a need for evidence-based techniques to increase self-compassion in classrooms. Therefore, it is worthwhile to study how a practical HeartMath intervention, specifically the HLI technique, influences perfectionism in Albertan students.

Specifically, this study proposes three research questions:

R1. Does a 6-week, 5-minute HLI intervention reduce perfectionistic thinking in 9–11-year-old students?

R2. Is a 5-minute HLI intervention more likely to lower participants' reported levels of other-oriented perfectionism and self-oriented perfectionism thinking scores compared to their socially prescribed perfectionism thinking scores?

R3. Is a 5-minute HLI intervention suitable as a daily classroom learning activity, as determined by assessing students' perceived value of the activity?

It is hypothesized that perfectionistic thinking will decrease after utilizing the HLI intervention for a 6-week period. Additionally, it is theorized that perfectionistic thinking specific to other-oriented perfectionism and self-oriented perfectionism will decrease after engaging in the exercise for a 6-week period, in comparison to socially prescribed perfectionism. This theory is based on the components of the HLI exercise that emphasize compassion towards oneself and others, thereby reducing self-criticism and criticism for others while not affecting criticism received from others. Through open-ended survey questions and interviews, it is anticipated that students will perceive the HLI exercise as a beneficial daily activity within the classroom.

CHAPTER 3: PROPOSED METHOD

The proposed research design is an explanatory sequential mixed method, parametric, intervention study that investigates perfectionistic thoughts among elementary students before and after engaging in a 6-week HLI intervention. To investigate this relationship, teachers will lead the HLI practice in their classrooms for 5 minutes each school day. Before and after learning the HLI practice, students will complete a questionnaire measuring their level of perfectionistic thoughts. All students will take part in the HLI practices as part of the class, as teachers do not need parental consent for a classroom activity that aligns with the curriculum. Additional interviews will be carried out with select students, ideally those who have scored higher on the perfectionism measures, indicating a stronger connection with perfectionistic thoughts. The following section reviews the recruitment of participants, selection of measures, procedure guideline, and proposed analysis.

Participants

Recruitment

This prospective study will recruit students through a public elementary school that has tentatively agreed to participate on the conditions of ethics approval and proof of research value within the school. Research value will be determined by examining the following aspects: sensitivity, intrusiveness, scope, relevance, and level of student/teacher involvement. The school consists exclusively of grade four to six classes. Within the school, all teachers (approximately 15) will be given the opportunity to participate with their class. Teachers have the option to include their class because, in addition to offering up class time for testing sessions, they must lead their class in the intervention. Ideally, teachers will also assist in maintaining a record of participating students for the study, including gathering consent forms and facilitating student

questionnaire completion. Teacher involvement is crucial to the success of the study. Researcher bias will be mitigated by my non-involvement within these areas. Having teachers lead the HLI practice helps avoid demand effects (Orne, 1962), which can lead to altered behaviour from students.

In collaboration with teachers, parents will be notified of the study through recommended means (email, physical letter). An informal meeting will be held to discuss the study and address any inquiries prior to data collection. Parents and students must consent to the students' data being used in the study.

Inclusion Criteria

This study focuses on the experiences of grade 4 to 6 students in Alberta, Canada exclusively. Students who participate in this research are from a convenience sample of elementary school students from a willing school located in Alberta. The inclusion criteria are as follows: students, of any age, gender, and ethnicity, who are currently completing grade 4, 5, or 6.

Exclusion Criteria

Students from classrooms that are not participating in the study will be excluded. Additionally, students who are not present for both testing sessions will be omitted from the analysis. Students who have scored in the low to mid-range on questionnaire measures will be excluded from the interview process, unless such exclusion is not feasible.

Sample size

Following power analysis conducted using GPower, it has been determined that a sample size of 45 students is necessary to detect a medium effect. Considering potential attrition, and the

requirement for students to attend both testing sessions, the target sample size for the current study has been set at 60 students.

Measures

Questionnaire A

Questionnaire A will be completed by students prior to the intervention. This questionnaire comprises of 35 questions, with three pertaining to demographic information and 32 assessing perfectionistic thoughts. It should take students approximately 10 minutes to complete this questionnaire.

Demographic Information

The demographic portion of the questionnaire will ask students about their age, grade, and gender. This information will be gathered to explore potential differences due to age and gender. See full list of questions in **Appendix A**.

Perfectionistic Thoughts

The Trait Model of perfectionism (Hewitt & Flett, 1991) encompasses three orientations of perfectionistic thoughts: other-oriented, self-oriented, and socially prescribed. The two scales described below assess each trait of perfectionism across three subscales.

Child-Adolescent Perfectionism Scale (CAPS)

Multiple studies exploring the reduction of perfectionism in youth (Fillmore 2019; Nobel et al., 2012; Olton-Weber et al., 2020) have used the empirically validated (Vicent et al., 2020), Child-Adolescent Perfectionism Scale (CAPS) developed by Flett and colleagues (2016). This measure uses two subscales to examine self-oriented and socially prescribed forms of perfectionism. Specifically, the 22-item scale is divided into 12 self-oriented items (e.g., “I try to

be perfect in everything I do”) and 10 socially prescribed items (e.g., “There are people in my life who expect me to be perfect”). These are answered on a 5-point Likert scale ranging from (1) *false- not at all true of me* to (5) *very true of me*. Scores on each subscale are obtained by averaging the responses, noting that items 3, 9, and 18 are reverse scored. The CAPS will be used in the current study to measure students’ self-oriented perfectionism and socially prescribed perfectionism scores. Higher scores indicate stronger levels of perfectionistic thoughts. Perfectionistic thoughts will be examined on a continuum, from *low levels of perfectionistic thoughts* (self-oriented perfectionism: 0-24; socially prescribed perfectionism: 0-20) to *medium levels of perfectionistic thoughts* (self-oriented perfectionism: 25-36; socially prescribed perfectionism: 21-30) to *high levels of perfectionistic thoughts* (self-oriented perfectionism: 37-60; socially prescribed perfectionism: 31-50). See full list of questions in **Appendix B**.

Other-Oriented Perfectionism Subscale-Junior Form

Flett and colleagues (2022) recently developed the 10-item Other-Oriented Perfectionism Subscale-Junior Form (OOPjr). This measure compliments the CAPS, and both scales can be used reliably together (Hewitt et al., 2022). Similarly to CAPS, students will be asked to rate each item along a 5-point Likert scale from *not at all* (1) to *extremely* (5). Scores on other-oriented perfectionism are obtained by averaging the responses. The OOPjr will be used in the current study to measure students’ other-oriented perfectionism scores. Higher scores indicate stronger levels of perfectionistic thoughts (*low*: 0-20, *medium*: 21-30, *high*: 31-50). See full list of questions in **Appendix C**.

Questionnaire B

Questionnaire B will be completed by students after the HLI intervention. The prospective study follows a pre-test post-test design, where students will be presented with

identical questions to those included in the previous questionnaire. This questionnaire comprises the previous components of Questionnaire A, plus five additional short answer questions. Some example questions are “What did you think of the Heart Lock-In technique?”, “Do you think you will continue to use the Heart Lock-In technique on your own? Why or why not?”, and “Will you share this technique with anyone in your life? If so, who?” See full list of questions in **Appendix D**. These additional questions will garner a deeper investigation of the students’ interactions with HLI. It should take students approximately 25 minutes to complete this questionnaire.

Heart Lock-In

The intervention utilized in this study to regulate emotions, known as the HLI exercise, consists of three steps (HeartMath Institute, 2016):

1. Begin by focusing on the heart and practicing HFB, which involves slowing and deepening the breathing rhythm while envisioning the breath flowing in and out of the heart. Placing a hand over the heart can aid in focusing on this area of the body.
2. Activate regenerative feelings such as love, appreciation, and kindness. To facilitate this activation, participants can visualize a loved one or a comforting object. Once activated, it is important to maintain these regenerative feelings throughout the practice.
3. Extend these regenerative feelings to both oneself and others. Start by directing these feelings inward towards oneself, then outward to others. Visualizing waves of energy emanating inward and outward may assist in this process.

HLI Teacher Training

Each day for 6 weeks, the teacher will lead the class through HLI for 5 minutes. Teachers will be trained in person in an adapted HeartMath Resilience Advantage program by a certified HeartMath trainer (HeartMath Institute, 2024). This training will be approximately 90 minutes to

2 hours and encompasses an overview of the HeartMath system, hands on experience with HeartMath techniques, and participant manual. This ensures teachers will be confident using HeartMath within the classroom setting. This training will be offered to the teachers at no charge as an incentive to participate with their classroom.

Semi-structured Interviews

Interviews will take place to gather data regarding students' engagement with HLI. My aim is to gain a better understanding of HLI as a classroom learning tool for students by assessing its level of intrusiveness, relevance, value, and student engagement. Further, qualitative and quantitative data pairs for a convergence of measures, enabling a synthesis of findings. Semi-structured interviews consisting of six open-ended questions will guide this process (three questions about perfectionistic thoughts; three questions about HLI). Interview questions will probe students' experiences while engaged in HLI. For example, students will be asked "What is the most important thing you learned in the Heart Lock-In technique?"; "Does using the Heart Lock-In exercise change the way you think/feel about yourself?"; "Think back to a time when your work was not quite the best it could be, maybe it was at school but maybe it was home or somewhere else. Describe it for me. How did that feel?" 5 to 10 students will participate in interviews. Ideally, interviewees will be students who scored higher on the continuum of perfectionistic thoughts (>90); however, this may not be feasible, therefore researchers may need to interview participants with mid-range (65-90) and low scores (0-65) on the perfectionism measures. View the full list of questions in **Appendix E**. It is anticipated that interviews will take approximately 15-20 minutes to complete.

Procedures

Ethics and Informed Consent

After I have met with my committee to review the proposal and incorporate their feedback, an ethics application will be sent to the University of Alberta Research Ethics Board (REB) for approval. Once REB approval is obtained, I will complete Form 290-1 which is an application to conduct research within the participating school district. Along with 290-1, I will submit my recruitment materials, informed consent, a copy of the questionnaire/interview questions, a Criminal Record Check and Vulnerable Sector Search. Once superintendent approval is achieved, I will collaborate with the superintendent's office in contacting the school principal.

Collaborating with the principal, I will send recruitment material to teachers in the school. This information will be dispersed based on available methods as recommended by the principal (email, team meeting, etc.). Interested teachers will participate in the HeartMath training (date tbd). Ideally, teachers will assist in maintaining a record of participating students for the study, including gathering consent forms. If willing, they will also receive a code card containing student names and assigned codes. Throughout the study, teachers will securely store the list of names and codes and will facilitate student questionnaire completion using the assigned codes. Upon completion of data collection, the code card will be shredded.

Parents will be notified of the study per method recommended by each classroom teacher, such as email or physical letter sent home, and will be encouraged to attend an informational meeting, where details about the study and informed consent forms are provided. As the students are 9–11 years old, they can provide informed consent that has been tailored to a level of readability appropriate for this age group. Consent to participate solely applies to the utilization

of students' data within the scope of the current study. Alongside the signed informed consent form, students will provide their verbal assent before commencing the study and will continue to reaffirm their verbal assent throughout its progression. To entice student participation, I will distribute informative posters detailing HeartMath initiatives and providing links for them to explore the techniques, thus enabling them to make an informed decision about participation. The students who do not wish to participate will be able to work on other assignments (or another activity the teacher thinks is appropriate).

Proposed Timeline

Set-Up

In advance, I will collaborate with each teacher to ensure informed consent forms have been completed, assign numerical codes for students by creating unique codes for each consent form, and coordinate to schedule an appropriate time for the class to complete the questionnaire.

Questionnaire A

During the first classroom visit, all students will be asked to fill out Questionnaire A on paper. This should take approximately 10 minutes. I will function as a reader and scribe for students who have difficulty reading or writing. Throughout each stage, students will be made aware that their involvement in the study is voluntary and they have the option to withdraw their data at any time. Students will also be informed that they are allowed to skip any questions they prefer not to answer. Any questionnaires completed by students who have not given consent for data collection will be shredded.

Typical Classroom Visit

On questionnaire days, I will bring pre-codes questionnaires to the classroom. Ideally, the teacher will have briefed the class prior to my visit, but if not, I will introduce myself and explain

the purpose of my visit. I will explain to the students that their teacher will be handing out questionnaires for them to complete, reiterate the voluntary nature of their participation, and emphasize that this is an individual task. Students will be encouraged to complete the questionnaire independently and discouraged from discussing and sharing responses with peers. The teacher and I will monitor the students as they work. The teacher may decide on activities the students can engage in once they have completed the questionnaire. Afterwards, I will explain HLI and outline what the next 6 weeks entail. I will thank the students for their time and address any questions they may have. Subsequently, I will collect the questionnaires and manually input the data into the analysis software, SPSS.

6-Week HLI Intervention

Commencing directly after the classroom visit, students will spend 6 weeks, practicing HLI. Teachers will lead their class for 5 minutes each day, when they see fit. Before this period, a research assistant who is qualified to train individuals in the HLI practice will meet with the teachers involved in the study to train them in leading the practice. The formal training will strengthen teachers' ability to guide their students. All students, irrespective of whether they have given consent for their data to be utilized in the study, are encouraged to engage in the exercise alongside their classmates. As noted earlier, all students will engage in the activities as part of the classroom curriculum, and parental consent is not required for such activities.

Questionnaire B

Following the 6-week period, I will conduct a subsequent classroom visit. Students will complete Questionnaire B utilizing the same guidelines as the previous classroom visit (see Typical Classroom Visit).

Post HLI Intervention Interviews

In December, select students (chosen based on previous scores) will be invited to participate in interviews examining their engagement with HLI. These interviews will delve deeply into the research questions and offer richer insights compared to questionnaire responses. Interviews will be completed at the school during a mutually agreeable time for students and classroom teachers. I will coordinate with teachers in advance to establish a quiet, suitable location for these interviews. Each interview is expected to last approximately 15-20 minutes. Interviews will be audio recorded and transcribed using Otter.ai. All interview transcripts will be provided to participants and their parents for review- a process called member checking (Lincoln & Guba, 1985). Upon reviewing the transcripts, participants will have the opportunity to clarify their remarks or withdraw their data.

Proposed Analysis

Questionnaires

Proposed analysis includes descriptive statistics to observe means and standard deviations. Further examination involves conducting paired t-tests to compare levels of perfectionistic thoughts before and after completing the HLI intervention. Parametric tests, such as the paired t-test, rely on assumptions that the data is normally distributed. If this assumption cannot be accurately made with the data set, a non-parametric test, the Willcoxon, will be used.

Interviews

Thematic analysis will be used to evaluate data collected through interviews. The thematic analysis aims to extract recurring patterns, topics, or ideas from the data, with the purpose of shedding light on and addressing the research questions posed in the study (Maguire & Delahunt, 2017). By identifying and developing themes, researchers can gain deeper insights

and provide meaningful answers to the research inquiries. The themes serve as interpretative frameworks through which the data is analyzed, allowing researchers to organize and make sense of the information gathered. Ultimately, the themes generated through thematic analysis should directly contribute to addressing research questions and providing valuable insights into the research topic, rather than simply summarizing and organizing the data (Maguire & Delahunt, 2017).

By analyzing data through a thematic lens, I can gain valuable insights into the effectiveness, mechanisms, and contextual factors associated with the HLI intervention and its impact on perfectionistic thoughts among elementary students. These insights can help answer the research questions and inform future interventions and practices in this area.

Part One: Raw Data Analysis Collection

Interviews will be recorded and transcribed using Otter.ai. Once transcribed and member checked, I will thoroughly review the transcripts and listen to audio clips multiple times to familiarize myself with the data. Familiarizing oneself with raw data is crucial before proceeding to code creation, as emphasized by Maguire and Delahunt (2017), to ensure a comprehensive understanding. Additionally, I will verify the congruency between the audio recordings and transcripts to prevent data loss during translation. Any disparities between audio and transcripts, as well as auditory observations, will be noted in the margins (Creswell & Clark, 2018).

Part Two: Creating Rudimentary Codes

During the initial data review, I will jot down my initial impressions and assign rudimentary codes in the margins of the transcripts. Throughout this process, I will remain aware of potential biases and reflexivity. These preliminary codes will be refined over several weeks as I revisit and reread the data. I will also listen to the audio recordings multiple times to discern

underlying meanings and tones. It is imperative that these refined codes accurately capture participants' experiences. Subsequently, I will compare and merge codes to eliminate redundancy until representative singular codes emerge.

Part Three: Developing Descriptive Categories

Once a standardized set of codes and their definitions have been established, I will categorize them into overarching descriptive categories. These categories will serve as overarching labels for clusters of codes sharing similar attributes. For example, the codes 'giving kindness to self' and 'reducing self-criticism' could be combined into the broader category of 'self-compassion'. Throughout this process, I will ensure that the categories accurately reflect the codes and, by extension, the experiences of the participants.

Part Four: Consensus Coding and Interpretive Convergence

After establishing categories, an external coder, knowledgeable in the literature, will review the raw data and codebook to ensure coding accuracy, a process known as consensus coding. This verification aims to maintain consistency across researchers (Olson, 2016). Subsequently, using interpretive convergence, any disparities between our codes will be reconciled through thorough discussion until consensus on coding and categorization is achieved (Olson, 2016).

Part Five: Forming Themes

Using the established categories, I will develop preliminary themes, encompassing the topics, concepts, and discernible patterns of significance presented in the interviews. To ensure alignment with the research questions, I will continuously reference them throughout this process. Themes will be defined as patterns within the data that hold significance in addressing the research questions (Maguire & Delahunt, 2017). It is imperative that these preliminary

themes accurately represent the categories and codes, and I will cross-reference them across the entire dataset to ensure relevance across all participants.

Part Six: Defining Themes

The final stage will focus on refining and defining the essence of each theme (Maguire & Delahunt, 2017). To achieve this, I will utilize the criteria outlined by Maguire and Delahunt (2017): *do the themes make sense, does the data support the themes, if themes overlap, are they really separate themes, are there themes within themes, are there other themes within the data?* Through this rigorous process, the essence of each theme will be clearly delineated, providing a robust framework for analysis and interpretation. As a last step, I will create a thematic map to visually represent the established themes and their interconnections (Maguire & Delahunt, 2017).

CHAPTER 4: DISCUSSION

Expected Results

After practicing HLI for 5 minutes daily over 6 weeks, I anticipate a decrease in self-oriented perfectionism and other-oriented perfectionism thoughts, while socially prescribed perfectionism thoughts remain unchanged. Overall, I expect a reduction in perfectionistic thinking among 9–11-year-old students. Further, I predict students will report the HLI intervention as a valuable daily classroom learning activity.

R1. Practicing HLI daily for 5 minutes over 6 weeks is anticipated to reduce perfectionistic thoughts in 9–11-year-old students. This practice encourages participants to detach accomplishments from one's sense of self-worth (Finlay-Jones, 2017) and teaches students to view situations through a compassionate lens rather than one of criticism. Literature indicates that students in this age group exhibit greater flexibility in their thoughts and beliefs, making them more receptive to change (Nobel et al., 2012; Slobodskaya, 2021). This characteristic is essential for interventions targeting modifications in personality traits.

R2. Practicing HLI daily for 5 minutes is anticipated to reduce other-oriented perfectionism and self-oriented perfectionism thinking scores compared to socially prescribed perfectionism thinking scores— given that socially prescribed perfectionism is strongly tied to cultural and societal pressures (Flett et al., 2022). There is no evidence to suggest that practicing self-compassion will impact how an individual perceives messages from others. Instead, self-compassion fosters an awareness of one's own unrealistic expectations, both internal and external, including meeting everyone else's expectations. Self-compassion turns the focus inward, where the individual prioritizes their own thoughts, emotions, and behaviours, thus, reducing self-oriented perfectionism tendencies. A compassionate mindset is likely to reduce

other-oriented perfectionism thinking because it encourages empathy and a desire to alleviate others' pain (Schabram & Heng, 2022). When others make mistakes, compassion fosters acceptance of their flaws, lowering high expectations, and striving to alleviate their disappointment rather than adding to it.

R3. The HLI intervention is designed to be a practical and easily implementable classroom activity. Its short duration of 5 minutes ensures it does not disrupt the classroom schedule. Students are expected to not only engage with the activity but also develop a positive relationship with HLI, making it a valuable addition to the classroom routine.

Benefits for Students and Schools

As outlined in Chapter 2, there are various potential negative consequences associated with perfectionism that influence diverse aspects of an individual's life, including work, school, and social relationships (see Adaptive versus Maladaptive Perfectionism, Chapter 2). Interventions aimed at reducing perfectionistic tendencies in students lower the risk of developing the aforementioned negative consequences later in life (see Prevention of Perfectionism in Youth, Chapter 2). Emotional regulation, in addition to its negative correlations with perfectionism, is a vital life skill that, when taught in schools, benefits children and society (Hoffman & De France, 2024; see Emotional Regulation, Chapter 2). It has a positive short-term impact on students by enhancing their motivation to learn and participate in the classroom (Denham et al., 2012). In the long term, it aids in cognitive development and fosters independent learning behaviour, leading to academic success (Graziano et al., 2007). Self-compassion and compassion for others are protective factors against developing mental health concerns (Neff, 2022; Zessin et al., 2015) and contribute to increased life satisfaction (Phillips & Hine, 2021; see Compassion and Self-Compassion, Chapter 2). Learning an additional ER strategy, such as HLI,

will positively impact students, and substantial research supports the use of HeartMath in educational settings (Aranberri-Ruiz et al., 2022; Bearden et al., 2023; McCleod & Boyes, 2021; see ER and HeartMath, Chapter 2).

Limitations

While this study has promising benefits for students and teachers, there are limitations to consider, including challenges in school settings, time constraints, measurement issues, school environments, and student engagement. Conducting research in schools is challenging as gaining access to students and teachers can be difficult. Nevertheless, schools need practical, time-appropriate, evidence-based exercises with simple instructions that can easily be integrated into classrooms to support students' development of emotional intelligence and overall well-being. Schools benefit from bringing HeartMath programs into the classrooms, as the training for teachers equips them with multiple ER strategies that are proven to be effective in classrooms (Aranberri-Ruiz et al., 2022; Bearden et al., 2023; McCleod & Boyes, 2021). Furthermore, HeartMath practices can help create emotional climates within classrooms that are ideal for learning (Zadina, 2023). While still a challenge to overcome, a brief 5-minute learning activity can be implemented with minimal disruption to the school day while enabling the integration of ER and compassion-focused exercises into lessons.

A considerable limitation is time. Understanding the complex realities of instructional timetables, this study suggests a 5-minute intervention due to the suitability of shorter classroom interventions, while 6 weeks allows the probability of school access without interrupting classes for a lengthy period. A 5-minute intervention takes up little teaching time and is short enough for students to stay focused on the exercise, but ultimately it may not be long enough to create impactful change. Bearden and colleagues (2023) found significant results with a 5-minute HLI

practice, but their dependent variables were ER and HRV. As perfectionism has ties to personality, a more time-extensive intervention may be needed to see results. One potential solution would be to extend the intervention past 6 weeks as the literature suggests that ideal compassion-focused interventions consist of a minimum of 12 hours (Craig et al., 2020). With 5-minute sessions, this would take 144 days, or roughly 30 weeks, which is five times longer than the proposed study. While this approach would still produce meaningful data, ultimately, this research aims to assess the suitability of HLI to reduce perfectionistic thoughts, and with that in mind, longitudinal or cross-sectional studies would be better suited to explore these results.

Additionally, while self-report measures are commonly used in psychology-based research, due to the subjective nature of many variables, their use in this study may limit the validity of the findings. Compared to physiological measures (e.g., HRV), self-report measures do not provide objective data, and participants may give biased or falsified responses. To address this limitation, it is recommended to include observational measures or reports from parents and teachers. These alternative measures could provide a more comprehensive and accurate assessment of the changes in perfectionistic thinking that result from the HLI practice.

The school environment is another potential limitation. Post-COVID, in September 2024 K-6 teachers are attempting to manage a new curriculum (Alberta Education, 2024). Moreover, Albertan class sizes exceed the recommendations set by the Alberta Commission on Learning (The Alberta Teachers' Association [ATA], 2023): for grades 4-6, class sizes are reported to have 25-30 students, compared to the recommended 23 students (ATA, 2024). Specifically, 62% of teachers reported increases in their class sizes in 2023 (ATA, 2023). I observed a class of second graders in 2024, and it was busy, loud, and chaotic. It is unclear how the exercise would

go in older classrooms, but from what I witnessed, it would not be accessible with second grade students.

Lastly, this intervention needs student buy-in. Limited research confirms the prevalence of perfectionistic thoughts in students between 9 and 11 years, but students who cannot relate to the purpose of practicing HLI may not be interested in engaging in the activity. To help overcome this barrier, Beaden and colleagues (2023) brought HRV devices for students to increase engagement and interest. Overall, the intervention needs to be captivating for students. Currently, there is only a poster with HeartMath information to encourage student curiosity. A more robust strategy would be to create a game out of the practice so it becomes fun for students to partake. For example, a bingo card could house different scenarios for students to envision while practicing HLI.

Further Research Areas

School-based Research

Many children are given feedback and direction regarding ER skills in various environments (home environments, sports programs, spiritual organizations, etc.; Hoffman & De France, 2024). However, the degree of feedback and direction varies, leaving some children unsure of how to regulate their emotions (Hoffman & De France, 2024). Schools are an environment where empirically supported ER strategies can be taught with consistent direction to support children in building their social-emotional skills (Hoffman & De France, 2024). Future research in schools is needed to evaluate the effectiveness of ER strategies for students, thereby strengthening empirically supported approaches within classrooms.

Parents

A further area of HLI research would be to evaluate its effectiveness in reducing perfectionistic thinking in children in the home. Heart Lock-In is a powerful tool for parents to co-regulate with their children, fostering a harmonious and understanding relationship. Children learn to regulate through co-regulation and modelling (Hoffman & De France, 2024). As parents self-regulate through HLI, this may also help their children learn to use HLI as a self-regulation tool. Since intrusive and negative parenting appears to be a factor in the development of perfectionism (Hong et al., 2017; Morris & Lomax, 2014), Heart Lock-In could be used as a routine family activity, promoting connection and collaboration among family members, emphasizing rejuvenating emotions and compassion for the self and others. HeartMath has yet to expand its research focus to evaluating strategies in the home. This tool can be easily adapted into families' everyday routines, such as in the morning to promote a positive start to the day, or in the evening to help children regulate before bed. Practicing daily at a similar time of day creates stability and routine in a child's life, and also creates a time for connection with family each day. Practicing HLI at home would contribute to ER training, which is understood to begin at home and is later solidified at school (Hoffman & De France, 2024).

Sports

Research evaluating HeartMath techniques would be valuable in the field of sport science because it could provide insights into how these techniques enhance athletic performance, improve stress management, and optimize overall mental and physical well-being for athletes. A study has already assessed HeartMath techniques as a clinical sport psychological skills training with a 12-year-old athlete (Edwards, 2019). Psychological skills training includes being present, visualization, goal setting, and pre-game preparation (Tamminen & Kim, 2024). Further research

is needed to investigate how practicing HeartMath before, during, or after games, can benefit high-level athletes and their teams. When considering the relevance of self-compassion with respect to sport science, it is essential for high-level competitive athletes to reset after making mistakes, rather than allowing those mistakes to fester and distract them from the rest of the game (Kuchar et al., 2023). Recognizing a mistake, learning from it, and moving past it, are crucial for ongoing performance.

Literature suggests that coaches' leadership skills are positively associated with sports performance in female athletes (Farah et al., 2021). Coaches play a crucial role in guiding their teams in HLI practice, with leading by example being particularly important. By incorporating HLI as a valuable routine before games or during intermissions, coaches can enhance athletes' performance. This underscores the significance of the coach's role in leading the team through sport psychological skills.

Kuchar and colleagues (2023) developed a self-compassion intervention (RESET) for NCAA athletes to help them respond more effectively to mistakes and failures. This intervention increased self-compassion and lowered self-criticism. Athletes and coaches in the study also reported an increase in perceived performance. Similar to RESET, Heart Lock-In is a compassion-focused intervention that can encourage athletes to show compassion to themselves and their teammates during the game, helping them reset and refocus after mistakes, thus reducing self-criticism and enhancing performance.

Clinical Practice

HeartMath techniques have been evaluated in various clinical settings across different populations. These evaluations have shown significant benefits among individuals with schizophrenia (Trousselard et al., 2016), adolescents with anxiety and depression (Reeves-

Oppenheim, 2021), youth with complex trauma (Johnson et al., 2020), adults with stress-related disorders (Blase et al., 2021) and PTSD (Criswell et al., 2018), and individuals with perinatal depression (Beckham et al., 2013). Additionally, HeartMath has been used to explore the therapeutic alliance between clients and counselors-in-training (Bishop & Martin, 2015).

HeartMath is currently used in clinical settings. My practicum site has trained all the practitioners in HeartMath and purchased several devices to measure HRV. I have been trained in HeartMath and use it frequently with my clients, especially those experiencing chronic pain. Our team, composed of a medical doctor, physical therapist, and psychologists, has led a Pain Reset program that runs for 2.5 hours weekly over 12 weeks. One weekly session is dedicated to HeartMath psychoeducation and strategies, and each participant receives a device to track their HRV. Each participant also receives individual sessions of in-depth HeartMath skills specific to their unique needs.

In addition to pain management, a registered provisional psychologist in the clinic has used HeartMath for a teen girls' group, encouraging self-compassion and ER skills. While I have not been involved in this group, she has reported positive outcomes, where teens have been able to understand and use HeartMath effectively. I have also personally used HLI with teens during individual sessions. Though I have not had the opportunity to implement HLI with children, I have seen the benefits of HLI among adolescents (12–15 years) who are not much older than the demographic explored in this paper. In my counselling work with teens, I have applied HeartMath techniques for various presenting concerns, including chronic pain, ADHD, and anxiety. Additionally, I have utilized these techniques, including HLI, to help teens build self-compassion, as they often tend to be overly self-critical. Based on my personal and academic

experience with HLI, I see the potential positive impact this tool could have in mitigating the effects of perfectionism in youth before they reach adolescence.

How This Research Will Help Me in my Role as a Psychologist

During my practicum placement, I worked with multiple teens and adult clients with perfectionist tendencies. Seeing the negative impact of perfectionism on clients' well-being, I was motivated to learn more about this topic. After diving into the research, I learned the importance of promoting self-compassion and ER during childhood to mitigate perfectionistic challenges in later years. With this insight, I was passionate about contributing to the current understanding of perfectionism, proposing an intervention that has the potential to help my clients and others who deal with perfectionism. I wanted to conduct research that focused on fostering self-compassion and ER skills during the early years of human development. By teaching these skills early on, I aim to reduce and mitigate the various perfectionistic tendencies discussed throughout this manuscript before individuals reach an age where reducing these behaviours and altering personality traits is more challenging. I intend to work as a child psychologist, so contributing to the body of literature on childhood-based interventions was an essential motivator for me.

Code of Ethics

As a psychologist, I hold a significant responsibility to society. This responsibility is articulated in the Canadian Code of Ethics for Psychologists, particularly in Principle IV, which emphasizes the necessity for psychologists to adhere to ethical guidelines and actively advocate for societal change (Canadian Psychological Association, 2017). My professional experiences, coupled with the extensive literature, highlight perfectionism's detrimental impacts on individuals' well-being. Recognizing these concerns, I am committed to advocating for change

by contributing to the research and developing strategies to mitigate the adverse effects of perfectionism. This commitment is driven by a desire to enhance well-being and foster a healthier society.

School Psychologist

As a school psychologist, this research could give me data and tools to collaborate with colleagues, such as teachers. Developing relationships with school staff is vital, as access to counselling services through the education system remains a challenge due to limited trained staff. For instance, my elementary school had over 500 students but only one school counselor; one school psychologist served multiple schools. With these numbers, students who need help will slip through the cracks and get missed—especially students who are managing academically but could be doing better with support. Even if these students are showing signs of perfectionist tendencies, they may not receive the support that could help them due to other more pressing concerns (e.g., severe mental health concerns). Engaging in mental health exercises as part of the curriculum for the entire classroom allows students to participate who might not receive individual parental consent. By integrating this practice as a universal strategy within the classroom, we can ensure that support reaches students who might otherwise be missed.

Collaborating with teachers to implement tools like HLI can address this issue effectively. This intervention is ideal for all students because it has been previously shown to help increase academic performance and reduce anxiety. This means that even students not showing perfectionistic tendencies can benefit from learning HLI. By providing teachers with tools to support students who experience perfectionistic traits at the classroom level gives school psychologists more time and resources to target and support students exhibiting other pressing concerns, such as anxiety, depression, and suicide ideation. By supporting and recruiting teacher

allies, I can effect change on a broader level, ultimately helping to overcome the limitations imposed by low staffing and limited resources.

Concluding Remarks

Despite its limitations, this project holds value in its delivery because it expands the research on prevention measures for perfectionistic thoughts in students. Once we know that HLI is an effective strategy in classrooms, future practitioners can more effectively facilitate environments in which ER and compassion-focused strategies reduce perfectionistic tendencies.

This project created a research model with the instruments necessary to assist future research and better understand perfectionism prevention in children. Dissemination of results has the potential to benefit Albertan students and teachers, practitioners, and society as a whole, by promoting strategies and practices to reduce mental distress.

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APPENDIX A: DEMOGRAPHIC QUESTIONS

What grade are you?

- Grade 4
- Grade 5
- Grade 6

What gender do you identify as?

- Short answer space

What is your age?

- 8
- 9
- 10
- 11
- 12
- Other: (Short answer space)

APPENDIX B: CHILD-ADOLESCENT PERFECTIONISM SCALE

This is a chance to find out about yourself. It is not a test. There are no right answers and everyone will have different answers. Be sure that your answers show how you actually are. Please do not talk about your answers with anyone else. We will keep your answers private and not show them to anyone.

When you are ready to begin, please read each sentence below and pick your answer by circling a number from “1” to “5”. The five possible answers for each sentence are listed below:

- 1 = False—Not at all true of me
- 2 = Mostly False
- 3 = Neither True Nor False
- 4 = Mostly True
- 5 = Very True of me

For example, if you were given the sentence “I like to read comic books,” you would circle a “5” if this is very true of you. If you were given the sentence “I like to keep my room neat and tidy,” you would circle a “1” if this was false and not at all true of you. You are now ready to begin.

| Please be sure to answer all of the sentences. | False | True |
|---|-----------|------|
| 1. I try to be perfect in everything I do. | 1 2 3 4 5 | |
| 2. I want to be the best at everything I do. | 1 2 3 4 5 | |
| 3. My parents don't always expect me to be perfect in everything I do. | 1 2 3 4 5 | |
| 4. I feel that I have to do my best all the time. | 1 2 3 4 5 | |
| 5. There are people in my life who expect me to be perfect. | 1 2 3 4 5 | |
| 6. I always try for the top score on a test. | 1 2 3 4 5 | |
| 7. It really bothers me if I don't do my best all the time. | 1 2 3 4 5 | |
| 8. My family expects me to be perfect. | 1 2 3 4 5 | |
| 9. I don't always try to be the best. | 1 2 3 4 5 | |
| 10. People expect more from me than I am able to give. | 1 2 3 4 5 | |

11. I get mad at myself when I make a mistake. 1 2 3 4 5
12. Other people think that I have failed if I do not do my very best
all the time. 1 2 3 4 5
13. Other people always expect me to be perfect. 1 2 3 4 5
14. I get upset if there is even one mistake in my work. 1 2 3 4 5
15. People around me expect me to be great at everything. 1 2 3 4 5
16. When I do something, it has to be perfect. 1 2 3 4 5
17. My teachers expect my work to be perfect. 1 2 3 4 5
18. I do not have to be the best at everything I do. 1 2 3 4 5
19. I am always expected to do better than others. 1 2 3 4 5
20. Even when I pass, I feel that I have failed if I didn't get
one of the highest marks in the class. 1 2 3 4 5
21. I feel that people ask too much of me. 1 2 3 4 5
22. I can't stand to be less than perfect. 1 2 3 4 5

APPENDIX D: OPEN-ENDED QUESTIONS

1. What did you think of the Heart Lock-In technique?
 - a. What parts did you like?
 - i. Why did you like those parts?
 - b. What parts did you dislike?
 - i. Why did you dislike those parts?
2. Do you think you will continue to use the Heart Lock-In technique on your own? Why or why not?
 - a. What parts will you use?
 - b. How did these aspects of the program help you?
 - c. What parts will you likely not use?
3. Will you share this technique with anyone in your life? If so, who?
4. What advice would you give to someone who felt that their work had to be perfect all the time?
5. Is there anything else you would like to share?

APPENDIX E: INTERVIEW QUESTIONS

1. Think back to a time when you did something extremely well, maybe it was at school but maybe it was home or somewhere else. Describe it for me. How did that feel?
2. Think back to a time when your work was not quite the best it could be, maybe it was at school but maybe it was home or somewhere else. Describe it for me. How did that feel?
3. What advice would you give to someone who felt that their work had to be perfect all the time? Do you feel that your work has to be perfect all the time?
4. How did you feel before the Heart Lock-In activity? How did you feel during the activity? How did you feel after the activity?
5. Does using the Heart Lock-In technique change the way you think/feel about yourself?
6. What is the most important thing you learned in the Heart Lock-In technique?

APPENDIX F: INFORMED CONSENT FORMS

Students

U OF L LETTERHEAD

Title of Study: Heart Lock-In: Self-Inducing Feelings of Love and Compassion to Decrease Perfectionistic Thinking in Elementary School Aged Children

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What is a research study?

A research study is a way to find out new information about something. Children do not need to be in a research study if they don't want to.

Why are you being asked to be part of this research study?

You are being asked to take part in this research study because we are trying to learn more about a classroom learning activity called Heart Lock-In, and how it impacts perfectionism. Perfectionism is a big word that means how well you believe you must do during activities, or how well you feel like others think you should do. We are asking you to be in the study because your classroom has been chosen to be a part of the study, which means your teacher will be leading your class through the learning activity. You get to decide if you want your information to be shared as part of the study.

If you join the study what will happen to you?

You will fill out a questionnaire that will ask about your age, grade, preferred gender, and your thoughts about yourself and how others see you. Afterwards, for 5 minutes each school day your teacher will lead you through the Heart Lock-In practice. You will do this as a class for 6 weeks. Finally, you will fill out another questionnaire that will ask the same questions as before, plus some questions about what practicing Heart Lock-In was like for you. I want to tell you about some things that will happen to you if you are in this study.

- You will be in the study for 6 weeks.
- You will fill out a questionnaire with questions about yourself that will take approximately 10 minutes.
- While at school, your teacher will lead you through the Heart Lock-In practice. The Heart Lock-In practice involves 3 steps that your teacher will guide you through. The steps are: 1)

you will focus on your heart and regulate your breathing by taking deep breaths, 2) you will think about positive feelings, such as love, compassion, or appreciation, 3) you will send those feelings to yourself and others. Each day you will do this for 5 minutes in class.

- You will fill out another questionnaire with more questions about yourself and what you thought about the Heart Lock-In practice. This will take you around 25 minutes.
- You might be asked to do an interview with me afterwards, but only if you want to.

Will any part of the study hurt?

I do not expect anything bad to happen to you, but some kids may not like the interruption in their day. You might not like practicing Heart Lock-In. Or you might feel uncomfortable answering questions on the questionnaire. While completing the questionnaire, you may skip any of the questions you do not want to answer. If you want to stop participating, for any reason, you may do so. If you would like to stop, simply tell me or your teacher.

Will the study help you?

Since your class is participating in the study, you benefit by learning Heart Lock-In. Heart Lock-In is a practice that lowers anxiety and stress for students, and helps boost school achievement. There are no direct benefits to you for consenting to share your information with the study.

Will the study help others?

This study might find out things that will help future children in elementary school.

Do you have to be in the study?

You do not have to be in the study. It's up to you. No one will be upset if you don't want to do this study. If you join the study, you can change your mind and stop being part of it at any time. All you have to do is tell us. It's okay, the researchers and your parents won't be upset.

Who will see the information collected about you?

The information collected about you during this study will be kept safely locked up. Nobody will know it except the people doing the research.

The study information about you will not be given to your parents or teachers. I will not tell your friends or anyone else how you respond or act as part of the study. Even if your parents or teachers ask, I will not tell them about what you say or do in the study.

What if you have any questions?

You can ask any questions that you may have about the study. If you have a question later that you didn't think of now, either you can email or have your parents email mckenna.causey@uleth.ca

Other information about the study.

- If you decide to be in the study, please write your name below.
- You will be given a copy of this paper to keep.

Yes, I will be in this research study.

No, I don't want to do this.

Child's name

Signature

Date

Person obtaining Assent

Signature

Date

PARTICIPANT CONSENT FORM

Title of Study: Heart Lock-In: Self-Inducing Feelings of Love and Compassion to Decrease Perfectionistic Thinking in Elementary School Aged Children

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Your child is being invited to take part in a research study. Before your child takes part, a member of the study team is available to explain the project and you are free to ask any questions about anything you do not understand. You will be given a copy of this form for your records.

Why is my child being asked to take part in this research study?

Your child is being asked to be in this study because they are in **classroom**. **(Classroom)** is taking part in this research study. This means **teacher** will be leading your child's class through a learning activity called Heart Lock-In. It is important to note that the class will be doing this activity

regardless of your consent, but you have the option of having your child's information shared as part of the study.

It is important to investigate activities that reduce perfectionistic thinking in students because of the well-documented negative consequences of perfectionistic thinking. So, the present study is exploring how Heart Lock-In influences perfectionist thinking in elementary aged children.

What is the reason for doing the study?

The present study is examining an intervention called the Heart Lock-In. Researchers are exploring how Heart Lock-In impacts perfectionistic thoughts. Rates of perfectionism are rising among students, and perfectionism is related to mental health distress (anxiety, depression, eating disorders). This is an interventional study, which means we are looking at the effects of a specific intervention. Heart Lock-In reduces anxiety and stress in students and can increase academic performance. We want to know if Heart Lock-In will reduce perfectionistic thoughts, which has never been studied before.

What will my child be asked to do?

Your child will fill out a questionnaire that will ask about their age, grade, preferred gender, and some thoughts about themselves and how they feel others see them. Afterwards, for 5 minutes each school day **(teacher)** will lead the class through the Heart Lock-In practice. They will do this as a class for 6 weeks. Finally, your child will fill out another questionnaire that will ask the same questions as before, plus some questions about what practicing Heart Lock-In was like for them.

- During the first classroom visit, all students will be asked to fill out Questionnaire A on paper. This should take approximately 10 minutes. I will function as a reader and scribe for students who have difficulty reading or writing. Throughout each stage, students will be made aware that their involvement in the study is voluntary and they have the option to withdraw their data at any time. Students will also be informed that they are allowed to skip any of the questions they would prefer not to answer. Any questionnaires completed by students who have not given consent for their data to be collected in the study will be shredded.
- Commencing directly after the classroom visit, students will spend 5 minutes, for six weeks, practicing HLI. Teachers will lead their class for 5 minutes each day, when they see fit. Teachers will be formally trained in leading this practice. All students, irrespective of whether they have given consent for their data to be utilized in the study, are encouraged to engage in the exercise alongside their classmates. As reiterated earlier, all students will engage in the activities as part of the classroom curriculum, and parental consent is not required for such activities.
- Following the six-week period, I will conduct a second classroom visit. Students will complete Questionnaire B utilizing the same guidelines as the previous classroom visit.

- Your child may have the option to take part in an interview. Interviewees will be invited based on questionnaire scores. These interviews will be semi-structured with open ended questions to explore the usefulness of Heart Lock-In.

What are the risks and discomforts?

Participating in this study involves minimal risk. But, answering some of the questions may bring up unwanted emotions for students, while other students may dislike the Heart Lock-In exercise. It will be made clear that they can tell us immediately if they want to stop. Students will be able to visit the school counsellor if they experience any psychological distress.

It is not possible to know all the risks that may happen in a study, but the researchers have taken all reasonable safeguards to lower any known risks to a study participant. If we find out anything new during the course of this research which may change your willingness to be in the study, we will tell you about these findings.

What are the benefits to me?

Since your child's class is participating in the study, you child benefits by learning Heart Lock-In. Heart Lock-In is a practice that lowers anxiety and stress for students and helps boost school achievement. There are no direct benefits to your child for consenting to share their information with the study. While there may not be any direct benefit to your child to share their information, results from this study may help us learn about perfectionistic thoughts in elementary aged children, explore Heart Lock-In in classrooms, and may benefit other students in the future.

Does my child have to take part in the study?

Sharing your child's information in this study is your choice. Your child will also have the choice to share their information, even if you give consent. If you decide to allow your child to be in the study, you can change your mind and stop being in the study at any point until after the last questionnaire has been completed. After that point we cannot remove your child's data from the study as it will have been incorporated into the dataset. To withdraw from the study please contact Mckenna Causey by emailing mckenna.causey@uleth.ca.

While completing the questionnaires, we will remind students they do not have to answer any questions that they are not comfortable with. Withdrawal of data can be done anytime during the completion of the questionnaires or while students are doing the intervention. If you or your child choose to withdraw consent, your child's questionnaire responses will be shredded.

Yet, the Heart Lock-In practice falls within the curriculum and your consent is not needed for the class to partake in Heart Lock-In as a classroom activity. As with all classroom activities, your child will be encouraged to take part. Also, as the nature of this study falls within a classroom setting, all students will be offered the opportunity to fill out the questionnaires so that no students are left out. Any questionnaires completed by students who have not given consent for data collection will be shredded.

Will my child's information be kept private?

Results will be published in pooled (aggregate) format. This means that your child's individual results will not be shared. Once your child has completed the paper survey, it will be scanned onto a password protected computer and transferred to a password protected jump drive. Once it has been transferred, the survey will be deleted from the computer. All information will be encrypted. Confidentiality is assured for any information students provide, and no identifying information will be reported. To lower risk, all information relating to students' responses will be kept secure and accessible only by the researchers.

During this study we will do everything we can to make sure that all information your child provides is kept private. No information relating to this study that includes your child's name will be released outside of the researcher's office or published by the researchers unless you and your child give us your express permission. Sometimes, by law, we may have to release your child's information with their name so we cannot guarantee absolute privacy. But, we will make every legal effort to make sure that your child's information is kept private.

During research studies it is important that the data we get is accurate. For this reason, your child's data, including their name, may be looked at by people from the Research Ethics Board.

After the study is done, we will still need to securely store your child's data that was collected as part of the study. The data will remain secured on the password protected drive for a minimum of 5 years after the end of the study, after which it will be deleted. A backup copy of the data will be stored in a secured drive.

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PARTICIPANT CONSENT FORM

Title of Study: Heart Lock-In: Self-Inducing Feelings of Love and Compassion to Decrease Perfectionistic Thinking in Elementary School Aged Children

Contact Information

Principal Investigator: Mckenna Causey

Name & Affiliation: Masters Student, University of Lethbridge

Mailing Address: TH (319) 4401 University Dr W, Lethbridge, AB T1K 3M4

Phone: (403) 329-2458

Email: mckenna.causey@uleth.ca

Supervisors: Dr. Thelma Gunn, Dr. Charlotte Brenner

Name & Affiliation: Professor, University of Lethbridge

Mailing Address: TH (319) 4401 University Dr W, Lethbridge, AB T1K 3M4

Phone: (403) 329-2458, (403) 329-2018

Email: thelma.gunn@uleth.ca, charlotte.brenner@uleth.ca

Your class is being invited to take part in a research study. Before your class takes part, a member of the study team is available to explain the project and you are free to ask any questions about anything you do not understand. You will be given a copy of this form for your records.

Why is my class being asked to take part in this research study?

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What will I be asked to do?

You will be asked to lead your classes through the Heart Lock-In practice. If you are interested, you will take part in training to confidently lead your class in the activity.

- You will be trained in-person in an adapted HeartMath Resilience Advantage program by a certified HeartMath trainer.
- This training will be approximately 90 minutes to 2 hours and encompasses an overview of the HeartMath system, hands on experience with HeartMath techniques, and participant manual.
- If willing, you will assist in maintaining a record of participating students for the study, including gathering consent forms and facilitating student questionnaire completion.
- If willing, you will receive a code card containing student names and assigned codes. Throughout the study, you will securely store the list of names and codes and will facilitate student questionnaire completion using the assigned codes.
- You must share class time for the students to complete the surveys.
- Each day for 6 weeks, you will lead the class through Heart Lock-In for 5 minutes, at a time that works best for you.
- You will be asked to collaborate with the researcher to find a time and quiet, suitable place in the school for student interviews.

What are the risks and discomforts?

Participating in this study involves minimal risk. However, answering some of the survey/interview questions may bring up unwanted emotions for students, while other students may dislike the Heart-Lock-In exercise. It will be made clear that they can tell us immediately if they want to stop. Students will be able to visit the class counsellor if they experience any psychological distress.

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What are the benefits to me?

You benefit by receiving complementary HeartMath training so that you are competent in leading your class through the Heart Lock-In practice. This training ensures you will be confident using HeartMath within the classroom setting. This training will be offered to you at no charge as an incentive to participate with your classroom.

Do I have to take part in the study?

Within the school, all teachers will be given the opportunity to participate with their class. You have the option to include your class because, in addition to offering up class time for testing sessions, you must lead their class in the intervention. Your involvement is crucial to the success of the study. You may withdraw consent and stop class participation in the study at any time, with no repercussions.

Will my information be kept private?

Confidentiality is assured for any information you provide, and no identifying information will be reported. To lower risk, all information relating to your participation will be kept secure and accessible only by the researchers.

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How do I indicate my agreement to be in this study?

By signing below, you understand:

- That you have read the above information and have had anything that you do not understand explained to you to your satisfaction.
- That your class will be taking part in a research study.
- That your class may freely leave the research study at any time.
- That you do not waive your legal rights by being in the study.
- That the legal and professional obligations of the investigators and involved institutions are not changed by your class taking part in this study.

SIGNATURE OF STUDY PARTICIPANT

_____ Pseudonym (if necessary)
 Name of Participant

_____ _____
 Signature of Participant Date

SIGNATURE OF PERSON OBTAINING CONSENT

_____ _____
 Name of Person Obtaining Consent Contact Number

A copy of this consent form has been given to you to keep for your records and reference.

Principal

University Letterhead

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Contact Information

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Name & Affiliation: Masters Student, University of Lethbridge

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What will the students be asked to do?

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- Following the six-week period, I will conduct a second classroom visit. Students will complete Questionnaire B utilizing the same guidelines as the previous classroom visit.
- The interviews will be completed at the school during a mutually agreeable time for students and classroom teachers. I will coordinate with teachers in advance to establish a quiet, suitable location for these interviews.
- Each interview is expected to last approximately 15-20 minutes.
- Interviews will be audio recorded and transcribed using Otter.ai. Students may request to stop the audio recording or end the interview at any time, without penalty.

- Audio recordings will be uploaded to a password protected computer. Transcripts will be transferred to a password protected jump drive, and promptly deleted from the computer.
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- Also, before results are shared with others, we will provide students and parents with the specific information and quotes from their interview that we would like to include in our reports. We will ask their permission to use this information in our published findings and presentations at conferences.

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What are the benefits to me?

Students benefit by learning Heart Lock-In. Heart Lock-In is a practice that lowers anxiety and stress for students and helps boost school achievement. There are no direct benefits to the students for consenting to share their information with the study. While there may not be any direct benefit to share their information, results from this study may help us learn about perfectionistic thoughts in elementary aged children, explore Heart Lock-In in classrooms, and may benefit other students in the future.

Teachers benefit by receiving complementary HeartMath training so that they are competent in leading their class through the Heart Lock-In practice. This training ensures teachers will be confident using HeartMath within the classroom setting. This training will be offered to the teachers at no charge as an incentive to participate with their classroom.

Do teachers and students have to take part in the study?

Within the school, all teachers will be given the opportunity to participate with their class. Teachers have the option to include their class because, in addition to offering up class time for testing sessions, they must lead their class in the intervention. Teacher involvement is crucial to the success of the study.

Sharing of student information in this study is up to the students and their parents. If parents decide to allow their child to be in the study, they can change your mind and stop being in the study at any point until after the last questionnaire has been completed. After that point we cannot remove individual student data from the study as it will have been incorporated into the dataset. With regard to the interview data, students can change your mind and stop being in the study at any point until they have member checked the interview transcript. After that point we cannot remove the data from the study as it will have been incorporated into the dataset.

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students are left out. Any questionnaires completed by students who have not given consent for data collection will be shredded.

Will student information be kept private?

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School District

University Letterhead

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SIGNATURE OF STUDY PARTICIPANT

_____ Pseudonym (if necessary)

Name of Participant

Signature of Participant

Date

SIGNATURE OF PERSON OBTAINING CONSENT

Name of Person Obtaining Consent

Contact Number

A copy of this consent form has been given to you to keep for your records and reference.

Student Interview Consent

U OF L LETTERHEAD

Title of Study: Heart Lock-In: Self-Inducing Feelings of Love and Compassion to Decrease Perfectionistic Thinking in Elementary School Aged Children

Principal Investigator(s): Mckenna Causey

Email: mckenna.causey@uleth.ca

Supervisor: Dr. Thelma Gunn

Phone Number(s): (403) 329-2458

Supervisor: Dr. Charlotte Brenner

Phone Number(s): (403) 329-2018

What is a research study?

A research study is a way to find out new information about something. Children do not need to be in a research study if they don't want to.

Why are you being asked to be part of this research study?

You are being asked to take part in this research study because we are trying to learn more about a classroom learning activity called Heart Lock-In, and how it impacts perfectionism. Perfectionism is a big word that means how well you believe you must do during activities, or how well you feel like others think you should do. We are asking you to be in the study because your classroom has been chosen to be a part of the study, which means your teacher led your class through the learning activity. After doing Heart Lock-In, you get to decide if you want to do an interview.

If you join the study what will happen to you?

You are being invited to participate in an interview. These interviews will ask you open ended questions to explore your thoughts on the Heart Lock-In practice.

- The interviews will be completed at the school during a time that works good for you, where you won't miss out on anything happening in class.
- Each interview is expected to last approximately 15-20 minutes.
- Interviews will be audio recorded. This means that only your voice will be recorded. There will not be any video of you.
- The audio will then be written out so I can read it.

Will any part of the study hurt?

I do not expect anything bad to happen to you, but some kids may not like the interruption in their day. You might not like the feeling of being recorded, and you can ask to have the recording turned off at any time. While completing the interview, you may skip any of the questions you do not want to answer. If you want to stop participating, for any reason, you may do so. If you would like to stop, simply tell me.

Will the study help you?

There are no direct benefits to you participating in an interview.

Will the study help others?

This study might find out things that will help future children in elementary school.

Do you have to be in the study?

You do not have to be in the study. It’s up to you. No one will be upset if you don’t want to do this study. If you join the study, you can change your mind and stop being part of it at any time. All you have to do is tell us. It’s okay, the researchers and your parents won’t be upset.

Who will see the information collected about you?

The information collected about you during this study will be kept safely locked up. Nobody will know it except the people doing the research.

The information you share during the interview will be shared as a transcript (written down) with you and your parents to review together. You will get to decide if you want to change anything about what you shared, or decide not to share it anymore. Your parents will help you.

What if you have any questions?

You can ask any questions that you may have about the study. If you have a question later that you didn’t think of now, either you can email or have your parents email mckenna.causey@uleth.ca

Other information about the study.

- If you decide to be in the study, please write your name below.
- You will be given a copy of this paper to keep.

Yes, I will be in this research study. No, I don’t want to do this.

| | | |
|--------------|-----------|------|
| Child’s name | Signature | Date |
|--------------|-----------|------|

| | | |
|-------------------------|-----------|------|
| Person obtaining Assent | Signature | Date |
|-------------------------|-----------|------|

Parent Interview Consent

University Letterhead

PARTICIPANT CONSENT FORM

Title of Study: Heart Lock-In: Self-Inducing Feelings of Love and Compassion to Decrease Perfectionistic Thinking in Elementary School Aged Children

Contact Information

Principal Investigator: Mckenna Causey

Name & Affiliation: Masters Student, University of Lethbridge

Mailing Address: TH (319) 4401 University Dr W, Lethbridge, AB T1K 3M4

Phone: (403) 329-2458

Email: mckenna.causey@uleth.ca

Supervisors: Dr. Thelma Gunn, Dr. Charlotte Brenner

Name & Affiliation: Professor, University of Lethbridge

Mailing Address: TH (319) 4401 University Dr W, Lethbridge, AB T1K 3M4

Phone: (403) 329-2458, (403) 329-2018

Email: thelma.gunn@uleth.ca, charlotte.brenner@uleth.ca

Your child is being invited to take part in a research study. Before your child takes part, a member of the study team is available to explain the project and you are free to ask any questions about anything you do not understand. You will be given a copy of this form for your records.

Why is my child being asked to take part in this research study?

Your child is being asked to be in this study because they are in **classroom**. **Classroom** is taking part in this research study. This means **teacher** will be leading your child's class through a learning activity called Heart Lock-In. It is important to note that the class will be doing this activity

regardless of your consent, but you have the option of having your child's information shared as part of the study.

It is important to investigate activities that reduce perfectionistic thinking in students because of the well-documented negative consequences of perfectionistic thinking. So, the present study is exploring how Heart Lock-In influences perfectionist thinking in elementary aged children.

What is the reason for doing the study?

The present study is examining an intervention called the Heart Lock-In. Researchers are exploring how Heart Lock-In impacts perfectionistic thoughts. Rates of perfectionism are rising among students, and perfectionism is related to mental health distress (anxiety, depression, eating disorders). This is an interventional study, which means we are looking at the effects of a specific intervention. Heart Lock-In reduces anxiety and stress in students and can increase academic performance. We want to know if Heart Lock-In will reduce perfectionistic thoughts, which has never been studied before.

What will I be asked to do?

Your child is being invited to participate in an interview. Your child is being invited based on their questionnaire scores. These interviews will be semi-structured with open ended questions to explore the usefulness of Heart Lock-In.

- The interviews will be completed at the school during a mutually agreeable time for students and classroom teachers. I will coordinate with teachers in advance to establish a quiet, suitable location for these interviews.
- Each interview is expected to last approximately 15-20 minutes.
- Interviews will be audio recorded and transcribed using Otter.ai. Your child may request to stop the audio recording or end the interview at any time, without penalty.
- Audio recordings will be uploaded to a password protected computer. Transcripts will be transferred to a password protected jump drive, and promptly deleted from the computer.
- All interview transcripts will be provided to you and your child for review. They will be sent to you through email within 2 weeks of the interview. Upon reviewing the transcripts, you and your child will have the opportunity to clarify their remarks or withdraw their data at this time.
- Also, before results are shared with others, we will provide you with the specific information and quotes from their interview that we would like to include in our reports. We will ask you and your child's permission to use this information in our published findings and presentations at conferences.

What are the risks and discomforts?

Participating in this study involves minimal risk. However, answering some of the interview questions may bring up unwanted emotions for students. It will be made clear that they can tell us immediately if they want to stop. Students will be able to visit the school counsellor if they experience any psychological distress.

What are the benefits to me?

There are no direct benefits to your child for consenting to take part in the study. While there may not be any direct benefit to your child to take part in an interview, results from this study may help us learn about the usefulness of Heart Lock-In as a classroom activity and may benefit other students in the future.

Do I have to take part in the study?

Allowing your child to taking part in an interview is your choice. Your child will also have the choice to take part in the interview even if you give consent. If you decide to allow your child to be in the study, you can change your mind and stop being in the study at any point until you have member checked the interview transcript. After that point we cannot remove your child's data from the study as it will have been incorporated into the dataset. To withdraw from the study please contact Mckenna Causey by emailing mckenna.causey@uleth.ca.

While completing the interview, students will be advised they do not have to answer any questions that they are not comfortable with, and can stop the audio recording or interview at any time.

Will my information be kept private?

Interviews will be audio recorded and transcribed using Otter.ai. Otter.ai is a U.S. based service that follows global regulatory requirements for privacy and security. Because the information is stored outside of Canada it may be subject to the privacy legislation of those territories which may include access by governmental agents. For more information, please visit <https://otter.ai/privacy-security>.

The audio recording will be uploaded onto a password protected computer for the duration of the study. After the study, it will be transferred to a password protected jump drive and deleted from the computer. All information will be encrypted. Confidentiality is assured for any information students provide, and no identifying information will be reported. To lower risk, all information relating to students' responses will be kept secure and accessible only by the researchers.

During this study we will do everything we can to make sure that all information your child provides is kept private. No information relating to this study that includes your child's name will be released outside of the researcher's office or published by the researchers unless you and your child give us your express permission. Sometimes, by law, we may have to release your child's information with

their name so we cannot guarantee absolute privacy. But, we will make every legal effort to make sure that your child's information is kept private.

During research studies it is important that the data we get is accurate. For this reason, your child's data, including their name, may be looked at by people from the Research Ethics Board.

When your child's interview is transcribed, we will assign a pseudonym (fake name) to protect their identity. If your child would like to choose their own fake-name, we will ask them to say so in the interview. If you would like us to use your child's real name, please indicate this on the signed consent form on the last page of this document. We will provide you with the specific information and quotes from their interview that we would like to include in our reports. We will ask you and your child's permission to use this information in our published findings and presentations at conferences.

After the study is done, we will still need to securely store your child's data that was collected as part of the study. The data will remain secured on the password protected drive for a minimum of 5 years after the end of the study, after which it will be deleted. A backup copy of the data will be stored in a secured drive.

The results of this study will be presented at academic conferences and may be submitted for publication in academic journals. Results may also be presented in non-academic forums/invited talks. An executive summary (written report) will also be shared in the school newsletter in order to be made available to interested parents.

What if I have questions?

If you have any questions about the research now or later, please contact Mckenna Causey by emailing mckenna.causey@uleth.ca.

If you have any questions regarding your rights as a research participant, you may contact the University of Alberta Research Ethics Office at reoffice@ualberta.ca or 780-492-2615 and quote Ethics ID Pro00XXXXXX. This office is independent of the study investigators.

The study is being funded by the Social Sciences and Humanities Research Council (SSHRC) through the Canadian Graduate Scholarships-Master's (CGS-M) program. The Principal Investigator is getting money from the grant to cover the costs of doing this study. You are entitled to request any details concerning this compensation from the Principal Investigator.

How do I indicate my agreement to be in this study?

By signing below, you understand:

- That you have read the above information and have had anything that you do not understand explained to you to your satisfaction.
- That your child will be taking part in a research study.
- That your child may freely leave the research study at any time.

Ongoing Consent

University Letterhead

PARTICIPANT CONSENT FORM

Title of Study: Heart Lock-In: Self-Inducing Feelings of Love and Compassion to Decrease Perfectionistic Thinking in Elementary School Aged Children

Contact Information

Principal Investigator: Mckenna Causey

Name & Affiliation: Masters Student, University of Lethbridge

Mailing Address: TH (319) 4401 University Dr W, Lethbridge, AB T1K 3M4

Phone: (403) 329-2458

Email: mckenna.causey@uleth.ca

Supervisors: Dr. Thelma Gunn, Dr. Charlotte Brenner

Name & Affiliation: Professor, University of Lethbridge

Mailing Address: TH (319) 4401 University Dr W, Lethbridge, AB T1K 3M4

Phone: (403) 329-2458, (403) 329-2018

Email: thelma.gunn@uleth.ca, charlotte.brenner@uleth.ca

Please review the transcript with your child and ensure it reflects the information they are comfortable sharing. Please change or delete any information in any of their transcribed responses to better reflect their intent, if necessary.

What is the reason for doing the study?

The present study is examining an intervention called the Heart Lock-In. Researchers are exploring how Heart Lock-In impacts perfectionistic thoughts. Rates of perfectionism are rising among students, and perfectionism is related to mental health distress (anxiety, depression, eating disorders). This is an interventional study, which means we are looking at the effects of a specific intervention. Heart Lock-In reduces anxiety and stress in students and can increase academic performance. We want to know if Heart Lock-In will reduce perfectionistic thoughts, which has never been studied before.

What will I be asked to do?

You and your child are being invited to member check the following transcript. Please take time to review the transcript, clarify their remarks, or withdraw their data at this time.

- Within the transcript, highlighted quotes are the ones we would like to include directly in our reports. Please let us know if we have your permission to use these quotes in our published findings and presentations at conferences.
- You and your child's continued participation in this study is completely voluntary. You may withdraw your child's data at any time.

Will my information be kept private?

During this study we will do everything we can to make sure that all information your child provides is kept private. No information relating to this study that includes your child's name will be released outside of the researcher's office or published by the researchers unless you and your child give us your express permission. Sometimes, by law, we may have to release your child's information with their name so we cannot guarantee absolute privacy. But, we will make every legal effort to make sure that your child's information is kept private.

During research studies it is important that the data we get is accurate. For this reason, your child's data, including their name, may be looked at by people from the Research Ethics Board.

We have assigned a pseudonym (fake name) to protect your child's identity when reporting our findings. Confidentiality is assured for any information students provide, and no identifying information will be reported.

After the study is done, we will still need to securely store your child's data that was collected as part of the study. The data will remain secured on the password protected drive for a minimum of 5 years after the end of the study, after which it will be deleted. A backup copy of the data will be stored in a secured drive.

The results of this study will be presented at academic conferences and may be submitted for publication in academic journals. Results may also be presented in non-academic forums/invited talks. An executive summary (written report) will also be shared in the school newsletter in order to be made available to interested parents.

What if I have questions?

If you have any questions about the research now or later, please contact Mckenna Causey by emailing mckenna.causey@uleth.ca.

If you have any questions regarding your rights as a research participant, you may contact the University of Alberta Research Ethics Office at reoffice@ualberta.ca or 780-492-2615 and quote Ethics ID Pro00XXXXXX. This office is independent of the study investigators.

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How do I indicate my agreement to be in this study?

By signing below, you understand:

- That you have read the above information and have had anything that you do not understand explained to you to your satisfaction.
- That your child will be taking part in a research study.
- That your child may freely leave the research study at any time.
- That you do not waive your child's legal rights by being in the study.
- That the legal and professional obligations of the investigators and involved institutions are not changed by your child taking part in this study.

SIGNATURE OF STUDY PARTICIPANT

_____ Pseudonym (if necessary)

Name of Participant

Signature of Participant

Date

SIGNATURE OF PERSON OBTAINING CONSENT

Name of Person Obtaining Consent

Contact Number

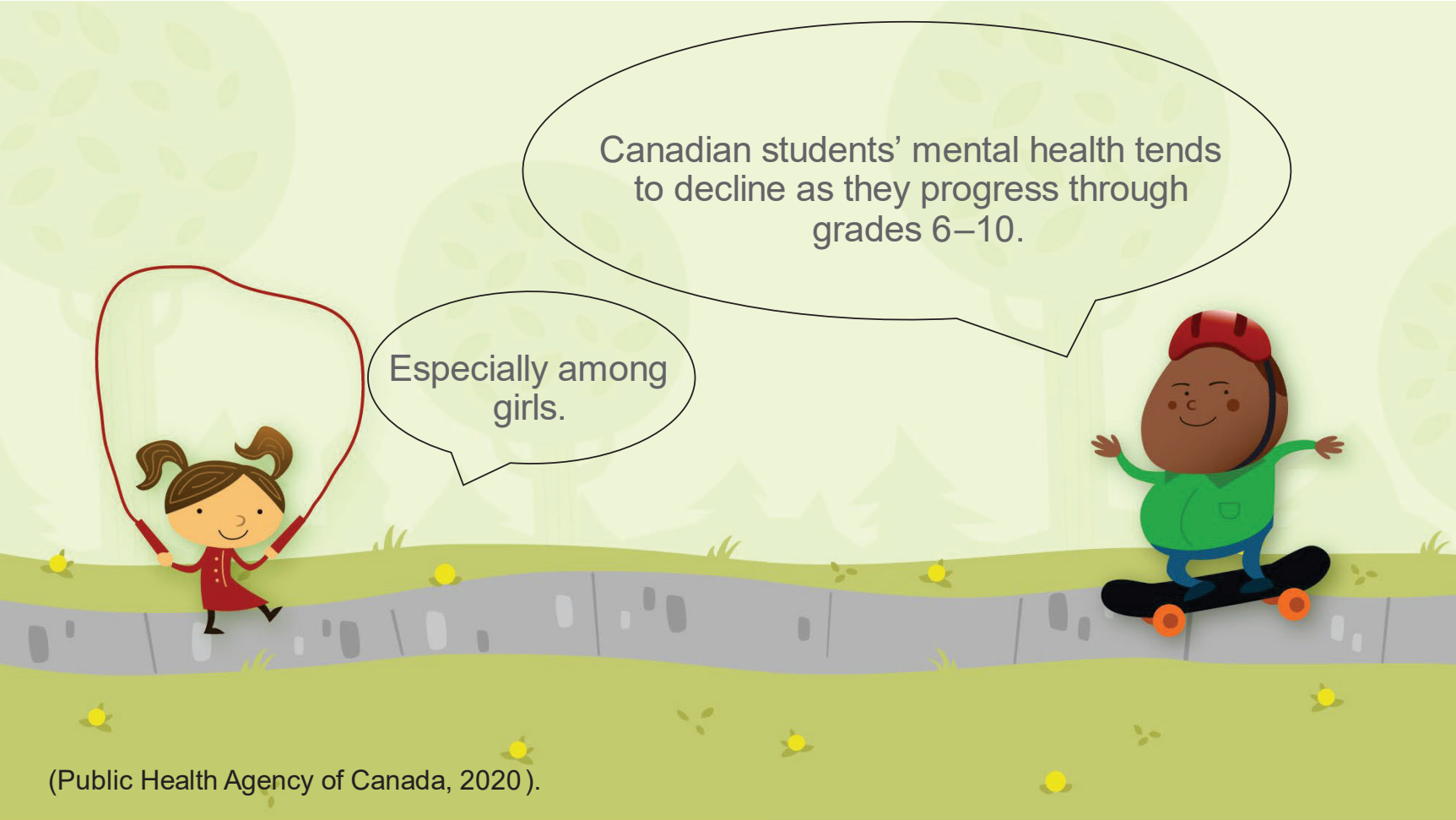
A copy of this consent form has been given to you to keep for your records and reference.

Mindfulness Practices in the Classroom

Mckenna Causey, BA, MEd

Counselling Psychology





Canadian students' mental health tends to decline as they progress through grades 6–10.

Especially among girls.

(Public Health Agency of Canada, 2020).



“SCHOOLS TODAY HAVE PERHAPS THE GREATEST INFLUENCE IN MEETING THE NEEDS OF CHILDREN OUTSIDE THE FAMILY ENVIRONMENT” (CONNELLY, 2009, P. 3).

Counselling services within the education system remains a challenge due to limited trained staff.



With support, teachers can give consistent direction to support children in building their social-emotional skills.

Mindfulness training in the classroom can be used as a universal strategy.

Universal strategies = reaching all students, including those who might otherwise be missed (e.g., students with perfectionistic tendencies).

Schools need realistic, time-appropriate, evidence-based exercises with simple instructions that can be readily implemented in classrooms to support students' emotional development .

Importance of Mindfulness in the Classroom



(Hoffman & De France, 2024).

Our Focus



This presentation highlights HeartMath strategies, focusing specifically on mindfulness training in emotional regulation and compassion.



Relevance to YOU

While most teachers agree that teaching emotional skills is necessary, teachers are reporting a lack of:

- **sufficient support**
- **adequate training**



(Bridgeland et al., 2013; Reinke et al., 2011).



How Mindfulness Practices Benefit Students

- Emotional regulation is a vital life skill that, when taught in schools, benefits children and society (Hoffman & De France, 2024).

- Emotional regulation has positive short-term and long-term impacts on students:
 - Enhancing their motivation to learn and participate in the classroom (Denham et al., 2012).
 - Assisting cognitive development and fostering independent learning behaviours (Graziano et al., 2007).Leading to academic success.

- Self-compassion and compassion for others are protective factors against developing mental health concerns (Neff, 2022; Zessin et al., 2015).



How Mindfulness Practices in the Classroom Benefit Students

- Classroom-based strategies can support all students.
- School counsellors often have to prioritize students with severe mental health concerns due to the large number of students they serve.
- Providing teachers with tools to support students at the classroom level gives school psychologists more time and resources to target and support students exhibiting other pressing concerns.



How can we Implement Mindfulness in the Classroom?

The following slides will introduce HeartMath, a mindfulness tool. We will explore how HeartMath strategies benefit students, their impact on learning, and how educators can effectively use them in the classroom.



Mindfulness Tool: HeartMath

HeartMath interventions use simple techniques to slow breathing in order to regulate and increase positive emotions, such as love and compassion, with the aim of enhancing coherence across the body's systems.

HeartMath®
Appreciation
Tool™

Notice and
Ease™

Shift and Shine
Technique™ for
Ages 3-6

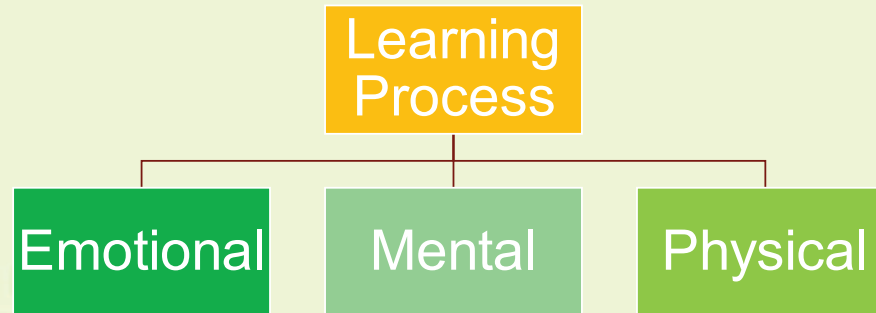
HeartShift Tool®
for Ages 7-11

Quick Coherence
Technique® for
Ages 12-18



(McCraty et al., 1998; https://www.heartmath.org/resources/heartmath_tools/)

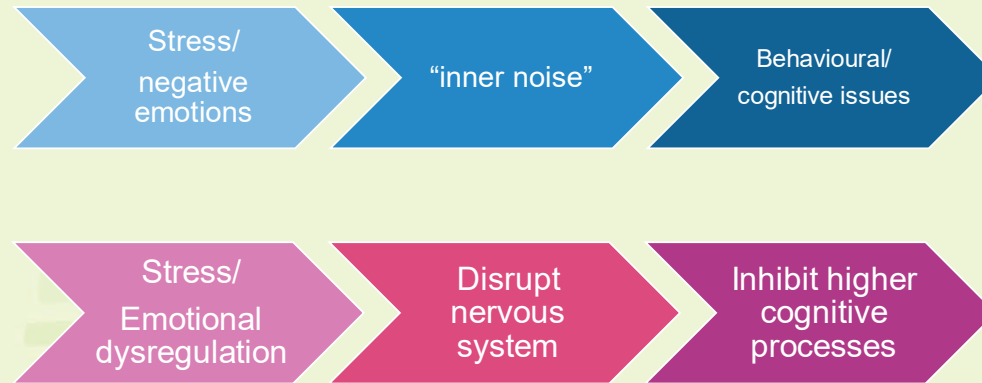
HeartMath and Learning



(Holmes, 2019; McCraty, 2005, p. 130; McCraty et al., 2009).



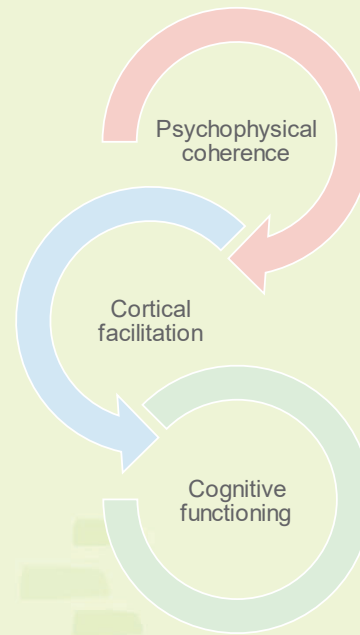
HeartMath and Learning



(Holmes, 2019; McCraty, 2005, p. 130; McCraty et al., 2009).



HeartMath and Learning



(Holmes, 2019; McCraty, 2005, p. 130; McCraty et al., 2009).



Research to Support HeartMath in Educational Settings

HeartMath breathing in 7–11-year-old students (Aranberri-Ruiz et al., 2022)

- 15-minute individual sessions outside the classroom
- Breathing reduced social stress and anxiety symptoms

HeartMath Heart Lock-In with elementary students in classrooms (Bearden et al., 2023)

- Enhanced emotional stability
- Feeling more positive about the self
- Improved interpersonal relationships

HeartMath mindful breathing, ER techniques, study and test-taking skills, and coping strategies with high school students (McCleod & Boyes, 2021)

- Increased academic achievement
- Increased self-efficacy for test-taking
- Reductions in anxiety related to social stress

HeartMath SafePlace Program with elementary and secondary school students (Connelly, 2009).

- Increase in prosocial behaviour
- Decrease in conduct behaviours and hyperactivity



Examples of HeartMath Strategies in the Classroom

- Heart Focused Breathing
 - Slow and deepen the breath while envisioning the breath flowing in and out of the heart
- Appreciation Breaks
 - Take a moment each day to recall something you appreciate
 - Can be done individually, in duos/small groups, or as a class
- Appreciation Lists
 - To help with appreciation breaks, create appreciation lists with students so they can easily remember something they appreciate
- Notice and Ease
 - Notice and admit what you are feeling
 - If possible, name the feeling
 - E-A-S-E the feeling out
 - Befriend the reaction by holding it in your heart, then let the feeling ease out of your system



<https://www.heartmath.org/resources/heartmath-tools/>

Let's Discuss:
How would you use these practices in your classrooms?

Start in dyads; then we will come together.



Let's Practice: Heart Lock-In

1. Begin by focusing on the heart and practicing Heart Focused Breathing,
 - Slow and deepen the breath while envisioning the breath flowing in and out of the heart.
 - Placing a hand over the heart can aid in focusing on this area of the body.
2. Activate regenerative feelings such as love, appreciation, and kindness.
 - It may help to visualize a loved one or a comforting object.
 - Once activated, it is important to maintain these regenerative feelings throughout the practice.
3. Extend these regenerative feelings to both oneself and others.
 - Start by directing these feelings inward towards oneself.
 - Then, direct these feelings outward to others.
 - Visualizing waves of energy emanating inward and outward may assist in this process.



(HeartMath Institute, 2016).



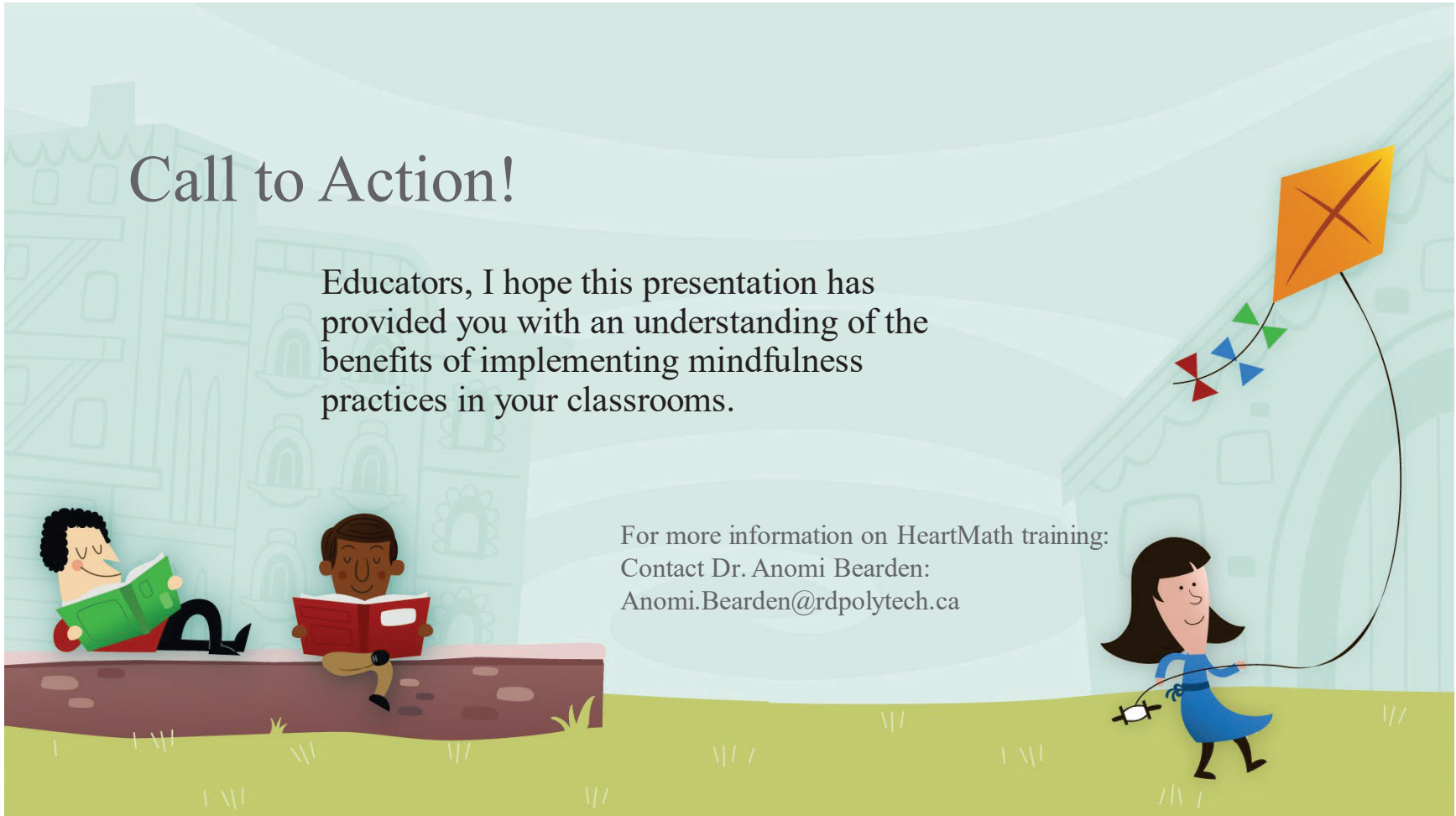
Let's Discuss: Practicing Heart Lock-In



Call to Action!

Educators, I hope this presentation has provided you with an understanding of the benefits of implementing mindfulness practices in your classrooms.

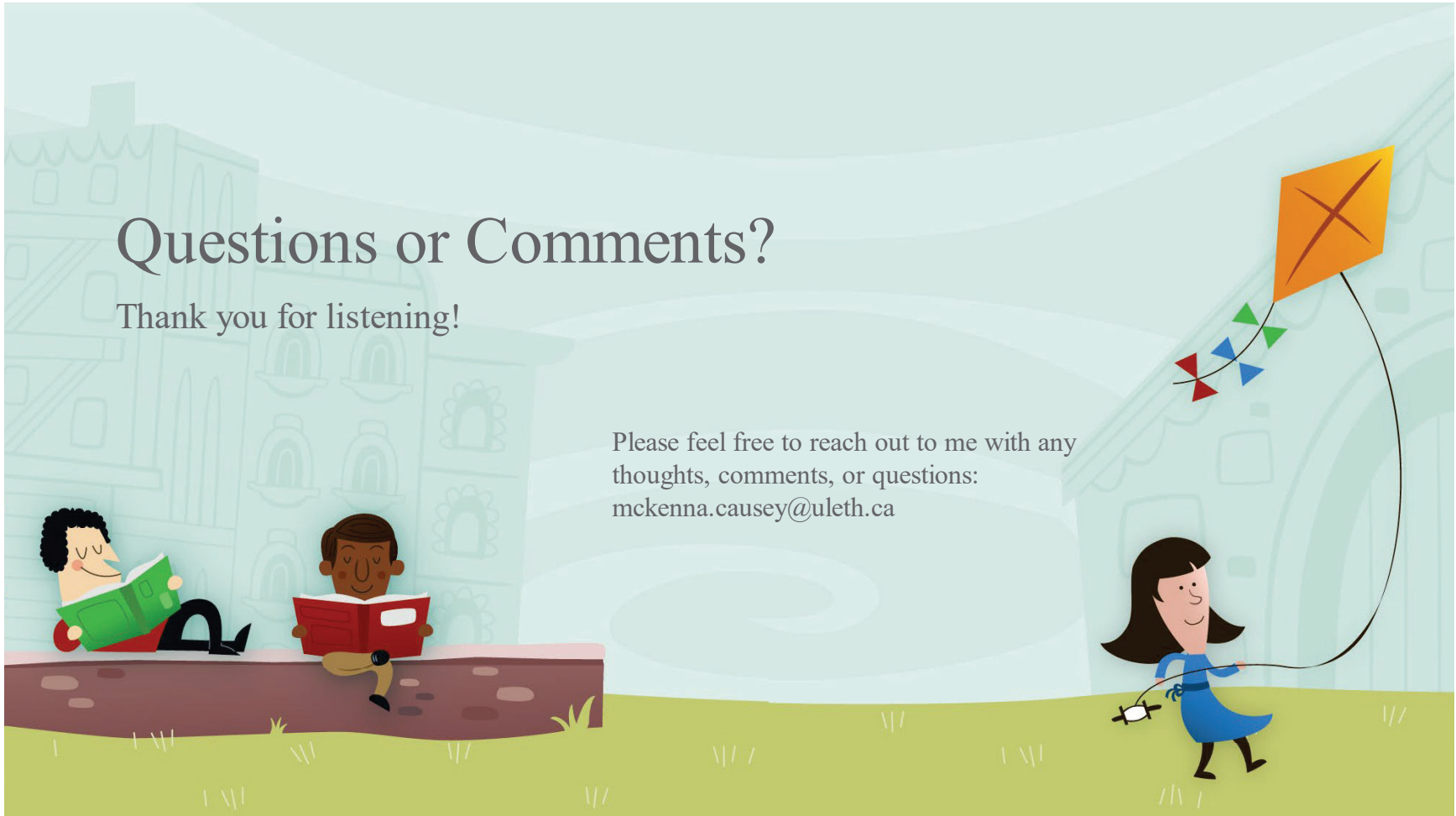
For more information on HeartMath training:
Contact Dr. Anomi Bearden:
Anomi.Bearden@rdpolytech.ca



Questions or Comments?

Thank you for listening!

Please feel free to reach out to me with any thoughts, comments, or questions:
mckenna.causey@uleth.ca



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APPENDIX G: POWERPOINT HANDOUT

Importance of Mindfulness in the Classroom

Universal strategies like mindfulness help us connect with students who might otherwise be overlooked, such as those with perfectionistic tendencies. With training and support, teachers and caregivers can provide guidance to support children in developing their social-emotional skills through mindfulness activities.

How Mindfulness Practices Benefit Students

Emotional regulation has a positive short-term impact on students by enhancing their motivation to learn and participate in the classroom (Denham et al., 2012). In the long term, it aids in cognitive development and fosters independent learning behaviour, leading to academic success (Graziano et al., 2007).

How Mindfulness Practices in the Classroom Benefit Students

When teachers have the tools, training, and support to address students' social emotional needs in the classroom, school psychologists and counsellors have more time and resources to deliver targeted support to the students in most need. Importantly, implementing mindfulness programs in the classroom ensures all students are reached and may prevent or lessen future mental health concerns.

Mindfulness Tool: HeartMath

HeartMath interventions use simple techniques to slow breathing in order to regulate and increase positive emotions, such as love and compassion, with the aim of enhancing coherence across the body's systems.



Mindfulness Practices in the Classroom



HeartMath and Learning

The learning process encompasses physical, mental, and emotional dimensions (Holmes, 2019).

Stress and negative emotions create "inner noise" for students, leading to behavioural and cognitive issues that can hinder learning (McCraty, 2005, p. 130).

Specifically, stress and emotional dysregulation disrupt the nervous system (physical), which then "inhibits higher cognitive processes" essential for effective learning (McCraty, 2005, p. 130).

Achieving a state of psychophysiological coherence (synchronized neurological systems) enhances cortical facilitation, improving cognitive functioning (McCraty et al., 2009).

Heart-Focused Breathing

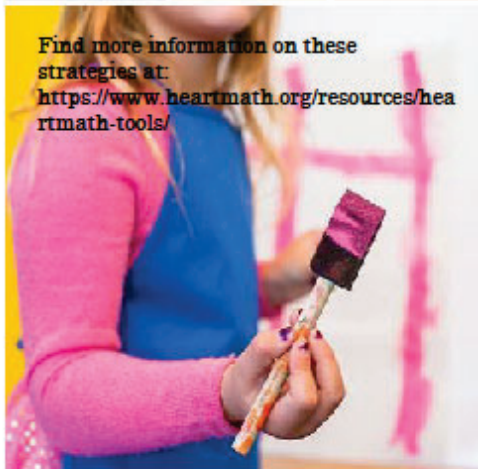
Slow and deepen the breath while envisioning the breath flowing in and out of the heart.

Appreciation Lists and Breaks

To help with appreciation breaks, create appreciation lists with students so they can easily remember something they appreciate.

Take a moment each day for students to recall something they appreciate. This can be done individually, in duos/small groups, or as a class.

Find more information on these strategies at:
<https://www.heartmath.org/resources/heartmath-tools/>



Examples of HeartMath Strategies you can use in your Classroom

Notice and Ease

Notice and admit what you are feeling. If possible, name the feeling. E-A-S-E the feeling out. Befriend the reaction by holding it in your heart, then let the feeling ease out of your system.

Call To Action

Educators, I hope this presentation has expanded your understanding and knowledge, motivated you, and inspired you to learn about and use mindfulness practices within your classrooms to support your students.

For more information on HeartMath training:

Contact Dr. Anomi Bearden
Anomi.Bearden@rdpolytech.ca

To reach me: mckenna.causey@uleth.ca