Healthy Transitions From High School – Review of the literature on universal school-based SEL programs

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September 11, 2018

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Introduction

The Healthy Transitions From High School (HTFHS) pilot project was conducted between
January 2015 and July 2017, and engaged students and educators from seven district school boards
in every region of Ontario. Results of the *HTFHS* pilot project were promising: *HTFHS* resources
were found to be a useful approach to developing students' SEL skills, based on positive feedback
about their relevance, appropriateness, and feasibility for use in a classroom setting. A
demonstration project is now planned to test their effectiveness in producing desired skill gains
and related outcomes such as reduced stress and improved well-being.

A first step toward this objective is to determine the need for and extent of potential refinements to
HTFHS resource content – and related training and delivery – based on the latest knowledge of
universal school-based SEL programs. SRDC's last literature review was conducted in 2013 (Smith
Fowler & Lebel, 2013). At the time, we reviewed the literature on conceptual frameworks for
student mental health, evidence of outcomes, and key factors for implementation success. We also
conducted a targeted environmental scan for current student mental health promotion programs
and resources with the goal of identifying a promising candidate to serve as a foundation for future
program development. Healthy Transitions – created by the Children's Hospital of Eastern Ontario
and the Child and Youth Network for Eastern Ontario – was selected, since it focused on supporting
youth through transitions (in this case, to high school), and developing a comprehensive set of
social emotional learning skills for positive mental health.

This document provides an update of the research literature on SEL in order to inform the next
iteration of *HTFHS* resource content and delivery.

Objectives and method

Research questions

This review of the research and grey literature on social emotional learning (SEL) highlights current knowledge about key concepts, best practices and effectiveness, and gaps in the literature. Our practical objective was to inform the next iteration of *HTFHS* content and implementation strategies in Ontario schools, as a prelude to a large-scale outcomes evaluation.

The research questions that guided this review include:

1. What conceptual frameworks for SEL have emerged, and what do they add to the framework developed by the Collaborative for Academic, Social, and Emotional Learning (CASEL, 2013)?

2. What comprehensive, school-based SEL programs for adolescents exist, and how does their content compare to the *HTFHS* resources?

3. What is the evidence of effectiveness for these comparable SEL programs for adolescents?

Scope of the review

SEL is defined as "the process of acquiring core competencies to recognize and manage emotions, set and achieve positive goals, appreciate the perspectives of others, establish and maintain positive relationships, make responsible decisions, and handle interpersonal situations constructively" (Payton, Weissberg, Durlak, Dymnicki, Taylor, Schellinger, & Pachan, 2008, p. 5-6). In this respect, SEL competencies can be seen as emotional intelligence or life skills, in their focus on managing emotions, solving problems effectively, and establishing good relationships with others (Sklad, Diekstra, de Ritter, Ben, & Gravelstein, 2012).

This definition implies a potentially very broad scope for this review, in that it could have included different theoretical frameworks such as life skills, positive youth development, or stress reduction, and related concepts and programs. The area of mindfulness, for example, has recently burgeoned as an area of program development and (to a lesser extent) study, but reviewing these related areas in any depth was not feasible within project parameters.

Accordingly, we identified the following criteria for in-scope conceptual frameworks and programs:

▪ Explicitly addresses SEL skills through one or several program components;

▪ Targets high-school aged youth;

▪ Implementation involves a universal, school-based program, whether by integrating SEL into academic curriculum or teaching practices, organizational strategies, or as free-standing SEL lessons.

Methods

To address these objectives, we conducted a comprehensive narrative review, focusing on the most recent literature on SEL frameworks and programs. Individual studies published prior to 2013 were not included, but if a leading publication on the topic published after 2013 mentioned a promising program implemented before this date, we opted to review the program itself.

The following steps were taken:

- Google and databases such PubMed were searched to look for systematic reviews, meta-analysis or reports on SEL programs implementation and effectiveness. As a result, both grey literature and peer-reviewed articles were included (e.g., *The 2015 CASEL Secondary Guide* was a first step to review promising new SEL programs);

- In each document, a review of individual articles allowed us to list SEL programs that fit our criteria;

- SEL programs were analyzed according to the following variables: core SEL skills addressed, implementation issues, evidence of effectiveness, and subgroup considerations;

- Other reports and articles about best practices in SEL were also reviewed.

Findings

Conceptual frameworks for SEL

The CASEL conceptual framework (2016) articulates five core SEL competency domains: *self-awareness, self-management, social awareness, relationship skills*, and *responsible decision-making*. Our review of the recent academic and grey literature on SEL revealed that the CASEL framework is very prevalent and still appears to be the dominant framework in the recent literature (Grant, Hamilton, Wrabel, Gomez, Whitaker, Leschitz, Unlu, Chavez-Herrerias, Baker, Barrett, Harris, & Ramos, 2017). According to research funded by the Wallace Foundation, for example, practitioners, policymakers and family members are most likely to be familiar with and accept the phrase "social and emotional learning" over other ways of describing these competencies (Loeb, Tipton, & Wagmer, 2016).
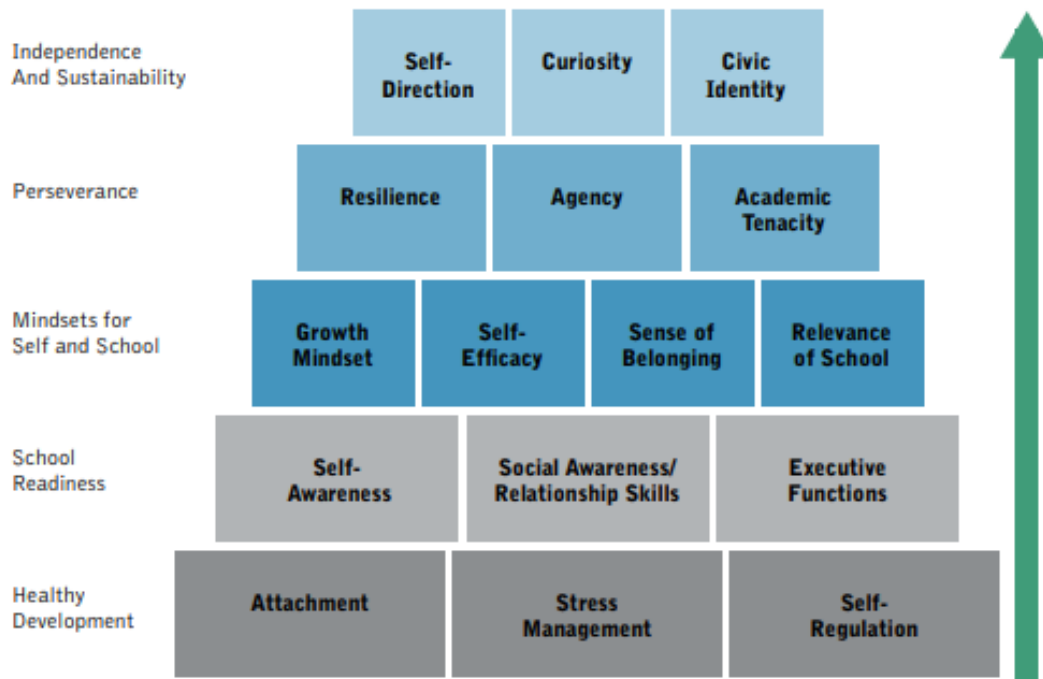
In addition to the five core SEL competencies articulated by CASEL, we identified the following conceptual frameworks in the SEL literature as having some relevance for *HTFHS*:

- **MyWays Success Framework:** This framework for student success emphasizes helping students create their own path (Belfiore and Lash, 2017). For example, "*wayfinding abilities*" focus on navigating transitions, learning from failure, and building social capital. Other competencies related to SEL include *self-direction and perseverance* (e.g., initiative, flexibility and adaptability, grit and tenacity, self-control), *positive mindsets* (e.g., "I belong in this community. My ability and competence grow with my effort"), *social skills and responsibility* (e.g., interpersonal skills, leadership, ethics), *communication and collaboration* (e.g., ability to work effectively with diverse teams), and *identify opportunities and set goals* (e.g., self-awareness).

- **Education for Life and Work:** The National Research Council (2012) in the US released a report which summarized research on "transferable skills," that is, competencies that contribute to successful experiences in school, the workplace, and life. These were organized in three broad areas: *cognitive competencies* (e.g., mastery of academic content in various subjects and of skills related to critical thinking, creativity, and argumentation), *intrapersonal competencies* (e.g., attitudes and behaviours such as conscientiousness, initiative, flexibility, emotional regulation, and grit), and *interpersonal competencies* (e.g., skills needed to relate to other people, such as communication, collaboration, conflict resolution, and leadership).

- **Seligman's (2011) PERMA model:** This framework has been empirically tested with Australian adolescents and has demonstrated applicability within the field of positive education (Kern, Walter, Adler, & White, 2015). The framework's five core elements of psychological well-being include *positive emotions*, or hedonic feelings of happiness (e.g., feeling joyful, content, and cheerful); e*ngagement*, or psychological connection to activities or organizations (e.g., feeling absorbed, interested, and engaged in life); *positive relationships* that involve feeling socially integrated, cared about and supported by others, and satisfied with one's social connections; *meaning,* which refers to believing that one's life is valuable and feeling connected

to something greater than one's self; and *accomplishment,* which involves making progress toward goals, feeling capable to do daily activities, and having a sense of achievement.

▪ **The RULER Approach to Social and Emotional Learning:** RULER is a universal SEL program that targets five key emotional skills based on the achievement model of emotional intelligence: *recognizing* emotions in oneself and others, *understanding* the causes and consequences of emotions, *labeling* emotions with an accurate and diverse vocabulary, and *expressing* and *regulating* emotions in socially appropriate ways (Hagelskamp, Brackett, Rivers, & Salovey, 2013).

▪ **Forum for Youth Investment's Social and Emotional Learning (SEL) Challenge:** This partnership among expert practitioners (e.g., youth workers, social workers, teachers) was designed to identify promising practices for building skills in six areas: e*motion management, empathy, teamwork, initiative, responsibility*, and *problem solving* (Smith, McGovern, Larson, Hillaker, & Peck, 2016).

▪ **OECD Study on Social and Emotional Learning (SSES)**: The OECD's (2015) international survey assessed 10- and 15-year-old students in a number of cities and countries around the world. John and De Fruyt (2015) concluded that the five-factor model of personality characteristics was the best suited for the purposes of the OECD's SSES. These were organized into five broad domains: *emotion regulation* (related to Emotional Stability)*, engagement with others* (related to Extraversion)*, collaboration* (related to Agreeableness)*, task performance* (related to Conscientiousness)*,* and *open-mindedness* (related to Openness to Experience).

▪ **Harvard Graduate School of Education:** This framework for Social and Emotional Learning is based on research by Jones and Bouffard (2012), and posits that major social and emotional skills and behaviors can be categorized into three main categories: *emotional processes* (e.g., emotional knowledge and expression, emotional and behavioral regulation, and empathy and perspective-taking)*, social/interpersonal skills (e.g.,* understanding social cues, interpreting others' behaviors, navigating social situations, interacting positively with peers and adults, and other prosocial behavior*),* and *cognitive regulation* (e.g., attention control, inhibiting inappropriate responses, working memory, and cognitive flexibility or set shifting). These categories continue to be used by Jones and her research team (2017) at Harvard.

▪ **Turnaround for Children's Building Blocks for Learning**: Turnaround for Children (2014), a non-profit that works in impoverished schools in New York City, Newark, New Jersey, and Washington, D.C, translates neuroscientific research into tools and strategies for schools in order to accelerate healthy development and academic achievement. Their Building Blocks for Learning Framework, created by educational psychologist Stafford-Brizard (2016), outlines the development of skills children need to become successful, engaged and independent learners in K-12 and beyond. It is intended to serve as a platform for multiple stakeholders from the areas of policy, research and practice to build a more comprehensive approach to student development in schools. Figure 1 below illustrates the framework's 16 key social-emotional learning skills for comprehensive student development.

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Figure 1 Turnaround for Children's Building Blocks for Learning

Source: Stafford-Brizard, 2016.

Issues with SEL frameworks

Lack of clarity and gaps

In 2017, the American Institutes for Research (AIR) undertook a comprehensive review of key indicators and measures of social and emotional development (Berg, Same, Nolan, Benson, & Jacobs, 2017). These authors reviewed 136 frameworks from 20 areas of study to organize constructs that fall under the umbrella term "social and emotional (SE) competencies." The following conclusions from their report are of particular interest for *HTFHS* programming and measurement:

▪ Different terms are used for competencies that have similar definitions. Similar terms are used for competencies that have different definitions. Many competencies occur in multiple subdomains, highlighting the interconnectedness of the competencies.

▪ Framework authors and developers use theoretical research more than empirical evidence to justify the structure and relationships among constructs. Likewise, frameworks are developed often to advance theory and practice and do not often include measurement considerations.

- There is an overall scarcity of SEL frameworks that delineate SE competencies by specific age range – fewer than ten per cent of frameworks outline the developmental sequence of competencies, which could mask unique needs of certain age groups**.**

- Fewer than 20 per cent of frameworks consider culturally and linguistically diverse individuals and groups, fewer than 20 per cent consider the experiences of youth with disabilities, and very few acknowledge the effects of traumatic experiences.

Despite these gaps and lack of conceptual clarity, Berg and her colleagues (2017) found that most competencies identified in their review fit into six domains (and 23 subdomains). These include *cognitive regulation, emotional processes, interpersonal processes, values, perspectives* and *identity/self-image* (see Figure 2).

Figure 2   Taxonomy Project coding system: six domains and 23 subdomains

Cognitive Regulation	Emotional Processes	Interpersonal Processes
▪ Attention Control ▪ Working Memory and Planning Skills ▪ Inhibitory Control ▪ Cognitive Flexibility ▪ Critical Thinking	▪ Emotion Knowledge and Expression ▪ Emotional and Behavioral Regulation ▪ Empathy and Perspective-Taking	▪ Understanding Social Cues ▪ Conflict Resolution/Social Problem-Solving ▪ Prosocial and Cooperative Behaviour
Values	Perspectives	Identity/Self-Image
▪ Ethical Values ▪ Performance Values ▪ Civic Values ▪ Intellectual Values	▪ Optimism ▪ Gratitude Openness ▪ Enthusiasm/Zest	▪ Self-Knowledge ▪ Purpose ▪ Self-Efficacy/Growth Mindset ▪ Self-Esteem

Adapted from Berg et al., 2017.

For more detailed information about operational definitions of SE competencies and emerging areas of interest, including cultural-related competencies, refer to the report by Berg and her colleagues (2017).

Developmental stages and SEL

A report by the US Institute of Medicine and National Research Council Committee (2011) provides insights into adolescent development from lead researchers in various disciplines (e.g., neuroscience, psychology, sociology, public health). According to the authors, the onset of adolescence, linked to the onset of puberty, is a time of dramatic physical, emotional, and cognitive changes, including (IOM & NRC, 2011, p. 42):

- Increased romantic motivation and interest in sexuality;

- Increased emotional reactivity and intensity;

- Changes in circadian rhythms;

- Increased appetite during periods of rapid growth;

- Increased risk of depression;

- Increased sensation-seeking.

The report further states that these neurobiological processes that define adolescence must be understood in the context of psychological development and social influences. In the same report, Bradford Brown, a developmental psychologist at the University of Wisconsin, wrote that there are four key psychosocial tasks all adolescents must accomplish (IOM & NRC, 2011, p. 48):

- To *stand out* – to develop identity and pursue autonomy;

- To *fit in* – to find comfortable affiliations and gain acceptance from peers;

- To *measure up* – to develop competence and find ways to achieve;

- To *take hold* – to make commitments to particular goals, activities, and beliefs.

An important aspect of identity formation involves gender, ethnicity, and sexual orientation – adolescents must discern the criteria for these possible identities, evaluate them, and decide whether and how to incorporate them into their personal sense of self. Closely linked to identity formation is the development of autonomy. If individuals develop a high sense of agency (feeling of control over actions and their consequences) while retaining close connections with significant adults, they will be more likely to develop a healthy "autonomous, relational self" (Kagitcibasi, 2005).

The rapid changes that characterize adolescence provide unique opportunities for youth to develop and practice SEL. According to Robbins (2015), both the neurological perspective and stages of adolescent development can be addressed through the five CASEL competencies:

1. Self-awareness addresses vulnerability in emotional regulation and heightened emotional responses;

2. Self-management addresses vulnerability in increased hormonal activity, emotional regulation, and heightened emotional responses;

3. Responsible decision-making addresses vulnerability/susceptibility to making decisions based on affective responses or rewards (note the importance of social context on reward-processing during adolescence);

4. Social-awareness addresses vulnerability of social hypersensitivity, difficulty taking others' perspectives;

5. Relationship skills address vulnerability of increased reliance on peers and social hypersensitivity.

As noted earlier, the report by Berg and her colleagues (2017) also remarked on the lack of developmental sequencing of SEL competencies in the literature. They proposed adding five additional subdomains to the coding system specific to adolescents, for future framework development:

- **Autonomy**: A new subdomain could cover three components: functional autonomy (the ways in which adolescents create and execute a strategy to reach their goals), emotional autonomy (defining goals and wishes separately from the influence of parents and peers), and attitudinal autonomy (the cognitive process of listing options and defining goal). These are important for academic and psychological well-being, and are especially important as young people transition to college or the workforce. (Coding system examples: "recognizes when to seek help from others," "acting upon one's sense of agency.")

- **Relational Self**: This could be added to the "Identity" domain as it reflects knowledge and feelings about oneself in relation to others and other groups. Identity is a key component in identity development in adolescence. (Code examples: "sense of belonging, "stands one's ground when another child tries to pressure him or her," "believes that others are not defined by their circumstances," "recognizes and understands others' strengths and weaknesses," and "identifies and understands character traits of others.")

- **Intimacy and attachment:** A new subdomain could help integrate the research that having responsive, supportive, and secure adult relationships supports effective coping strategies, positive identity development, and intimacy development. (Code examples: "letting yourself be known by others", accepting care from others", "showing vulnerability.")

- **Resourcefulness:** A new subdomain could address the importance of resourcefulness for all young people, and especially those coping with difficult life situations. While self-control, which is already well represented in the coding system, encompasses learned resourcefulness (Rosenbaum, 1990), the act of seeking help is a type of social resourcefulness (Code example: "seeks help.")

- **Coping and Resilience:** Given the prevalence of stress in young people's lives and the importance of developing coping strategies, this could be its own subdomain to bring attention to the factors that help youth build resilience in different part of their life. Individual competencies could include resourcefulness, growth mindset, optimism, and self-regulation.

Berg and colleagues (2017) also proposed a new set of codes to the "Purpose" subdomain related to *Opportunity Recognition and Orientation to the Future*. Examples of these competencies include opportunity recognition/awareness of opportunities for continued learning, awareness of life's options, and steps for making choices. Their team also considered these competencies important for development in later adolescence.

Lack of contextual considerations

It is important to think about SEL frameworks and indicators in light of contextual considerations (Berg, Same, Nolan, Benson, & Jacobs, 2017). Indeed, both CASEL and the Harvard team (see Figures 3 and 4 below) acknowledge that SEL skills are related to community, family, peers, and

other interactions and influences. However, it is noteworthy that these frameworks provide very little indication of *how* these processes unfold.

Consider Figure 3, which represents a CASEL framework updated in recent years to support school-wide efforts to promote SEL (Durlak, Domitrovich, Weissberg, & Gullotta, 2015, p. 7).

Figure 3   CASEL's conceptual model of SEL in educational settings
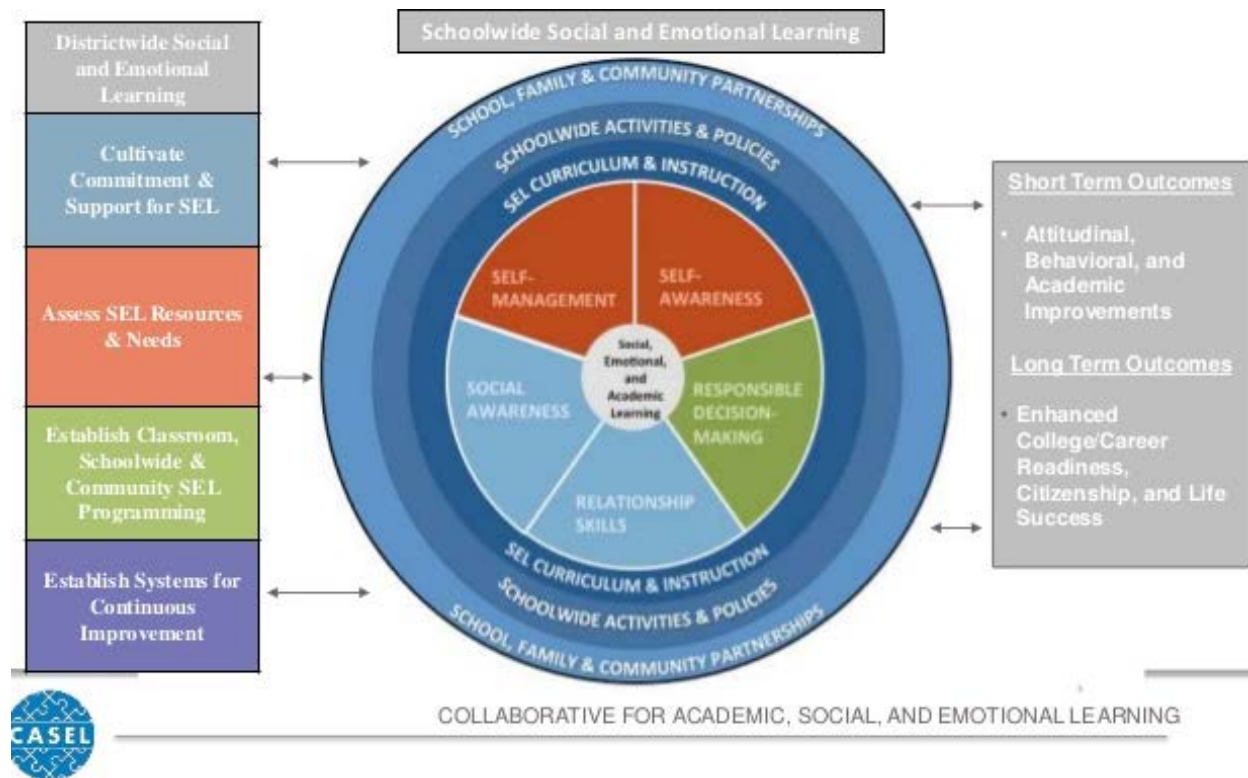
Source: Durlak, et al., 2015, p. 7.

Similarly, Jones and Bouffard (2012) from the Harvard Graduate School of Education created a framework (Figure 4) focused primarily on school context, including a deeper look at teachers' backgrounds and characteristics.

Figure 4   Harvard Graduate School of Education's SEL Framework

Source: Jones and Bouffard, 2012.

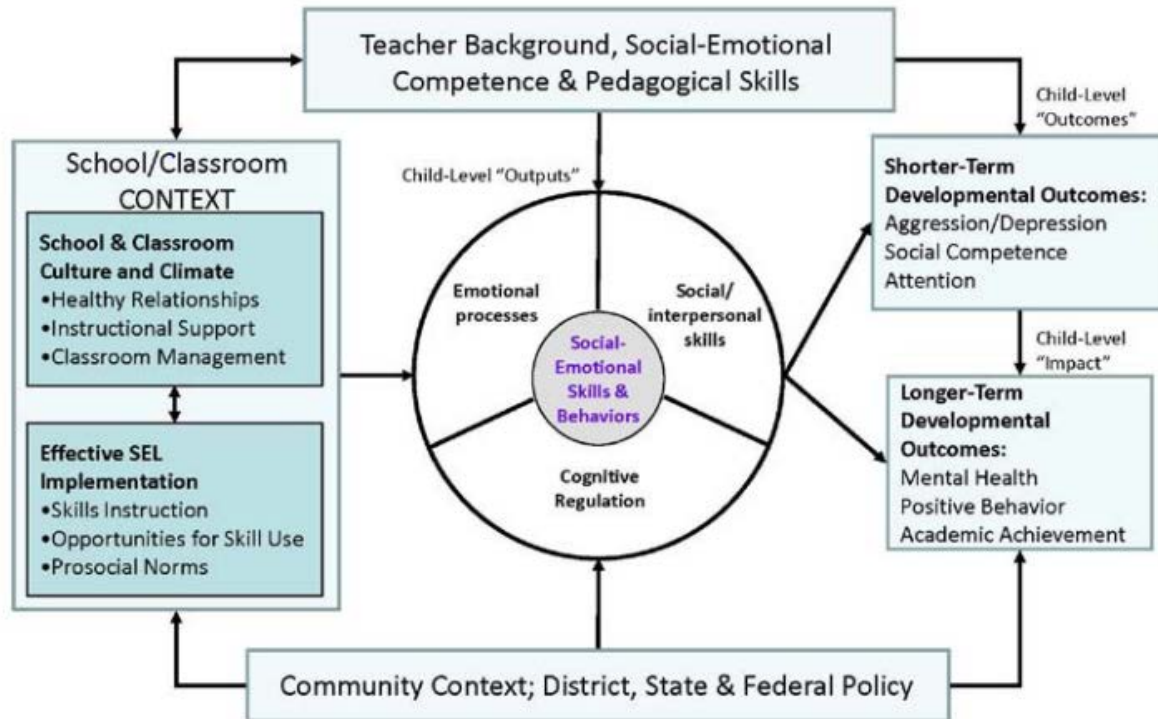Despite the acknowledgement of the importance of "developmentally-contextual models" which take into broader educational contexts (Jones & Bouffard, 2012), we suggest that current available frameworks appear to be of limited help to understanding how other sources of influence *outside* the school (e.g., cultural, political, economic) might foster or hinder SEL development.

Equity considerations

Despite the growing interest in SEL, many students face barriers to developing SEL competencies (Simmons, Brackett, & Adler, 2018). Barriers can include those which are systemic (e.g., poverty), institutional (e.g., exclusionary discipline practices and policies, lack of trauma-informed practices) or individual (e.g., educators' own implicit biases, educator stress and burnout).

Schools can play an important role in supporting young people who have experienced adversity to mitigate the negative outcomes of challenging or even traumatic experiences (Simmons, Brackett, & Adler, 2018). The following considerations are particularly relevant to *HTFHS* in terms of promoting access to high quality SEL education for all:

- Simmons and colleagues (2018) note the importance of *cultural competence* in education. "Cultural competency includes valuing diversity, being culturally self-aware, understanding the

dynamics of cultural interactions, and designing curricula that incorporates students' lives" (Diller & Moule, 2005). Educators who are more culturally competent may be better able to create conditions where students and families feel a sense of belonging, support, respect, and safety (Greenberg, Goldhaber, Weissberg, & Durlak, 2017). As noted by Hecht and Shin (2015), program developers and researchers need to explore strategies to design and implement SEL interventions in culturally competent ways.

▪ "*Equity literacy*" is a relatively new theoretical construct emerging in education, that involves identifying and confronting inequity in practices, policies, curricula, and research, and preventing the imposition of values and beliefs on young people, which can cause inadvertent harm (Gorski & Swalwell, 2015). It emphasizes the importance of students gaining a robust understanding about how people are treated by one another and by institutions and cultivates a general appreciation of diversity.

▪ Simmons and colleagues (2018) reinforce the pressing need to measure, understand, and assess the impact of universal SEL on educators' and students' *outcomes*. It is important that studies are conducted in different settings among diverse social groups and look at long-term effects, as well as dosage and quality of implementation.

SEL education and learning standards

Despite the issues identified above, it is clear from our review that SEL is increasingly viewed as important to the healthy development of children and youth, and that the field is advancing conceptually. Whether core competencies are divided into three domains (e.g., Education for Life and Work, Harvard GSE), five (e.g., CASEL, PERMA, RULER) or six (e.g., AIR, Forum for Youth), the domains themselves are viewed as relevant across the age and developmental spectrum. Of course, specific competencies and skills may be more or less important at different stages of development.

As noted above, work on articulating optimal developmental sequencing of SEL is at an early stage, but there are a few examples of how this has been incorporated into SEL education and learning standards, as described below.

▪ In British Columbia (2018), SEL is at the centre of curriculum and assessment redesign. Core competencies for the curriculum include: communication, creative and critical thinking, positive personal and cultural identity, personal awareness and responsibility, and social responsibility.[1] These competencies have been created on a developmental continuum (not by grade level) and present an inclusive, strength-based, student-centred approach. Sets of profiles provide descriptions of students as they progress to sophisticated stages of competency. The profiles are written from the student's point of view, reflecting student ownership and responsibility for demonstrating the competencies. See

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[1] The personal awareness and responsibility competency overlaps with CASEL's self-awareness, self-management and responsible decision-making domains, while the social responsibility competency aligns with CASEL's responsible decision-making, social awareness, and relationship skills domains.

https://curriculum.gov.bc.ca/competencies/social-responsibility for an example of a profile for "social responsibility."

- Some US schools and school districts have developed specific SEL learning standards.[2] SEL learning standards identify specific goals and benchmarks for student SEL by grade, and articulate what students should know and be able to do related to SEL (CASEL, 2017):

  - Cleveland Metro Schools (2011): http://www.clevelandmetroschools.org/cms/lib05/OH01915844/Centricity/shared/districtfiles/departments/humanware/SEL%20Scope%20and%20Sequence1.pdf

  - Illinois State Board of Education (2016): https://casel.org/wp-content/uploads/2016/08/PDF-7-Illinois-SEL-Standards.pdf

  - Kansas State Board of Education (2012): https://www.ksde.org/Portals/0/CSAS/Content%20Area%20(M-Z)/School%20Counseling/Soc_Emot_Char_Dev/SECD%20FINAL.pdf

Table 1 below provides an example from the Kansas State Board of Education (2012) of how SEL learning standards for each of CASEL's five core SEL competencies have been specified for various grade levels. Within each learning standard, the skills become slightly more complex as the grade level increases, and as students apply the skills in new and evolving contexts.

While it is standard practice for school districts and schools to have learning standards for core academic instructional areas, SEL is not always established as an area that merits instructional focus (CASEL, 2017). Creating comprehensive, developmentally appropriate learning standards communicates SEL as a priority. Standards can also help create a common language on a topic that is sometimes less familiar than math or other subjects to teachers, students, and parents.

Finally, it is important to recognize that the need for SEL does not end in high school – higher education settings and the workplace both bring new challenges. The structure and support of predetermined school schedules, parental monitoring, and family routines often change, which can shift responsibility from an external orientation towards a more internal focus (Conley, 2015). Conley (2015), a nationally recognized higher education researcher in the US, highlighted the importance of developing courses that promote SEL not only in elective classes but within the core curriculum, such as through mandatory first-year seminars. This would allow more students to be reached and provide SEL benefits on a broader scale.

In order to promote SEL throughout important developmental stages, it appears important to look for opportunities to systematically integrate SEL into education settings.

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[2] Our search did not identify any Canadian examples available online, though these may exist in other formats or be in development.

Table 1   Example of SEL learning standards from Kansas State Board of Education (2012)

Core CASEL SEL competency	Learning standard example	Grade			
		K-2	3-5	6-8	9-12
Self-awareness	Understand and analyze thoughts and emotions	1. Identify and describe basic emotions. 2. Identify situations that might evoke emotional responses. 3. Identify positive and negative emotions.	1. Critically reflect on behavioral responses depending on context or situation. 2. Identify the varying degrees of emotions one can experience in different situations. 3. Identify the positives and negatives of emotions that can be experienced with various communication forums. 4. Recognize reactions to emotions.	1. Describe common emotions and effective behavioral responses. 2. Recognize common stressors and the degree of emotion experienced. 3. Analyze and assess reactions to emotions in multiple domains (for example, in face-to-face or electronic communication).	1. Analyze complex emotions. 2. Evaluate degree of personal emotion from common experiences. 3. Recognize direct positive and negative reactions to emotions/stress (for example, fight or flight response, voice volume, tonal quality, shallow/rapid breathing, rapid heart rate, crossed arms, facial distortions, sweating). 4. Recognize indirect, negative reactions to emotion/stress (for example, substance abuse, insomnia, social withdrawal, depression, socially inappropriate displays of emotion, bullying, risk-taking behaviors). 5. Interpret/ anticipate how positive and negative expressions of emotions affect others in the interdependent world.

Core CASEL SEL competency	Learning standard example	Grade			
		K-2	**3-5**	**6-8**	**9-12**
Self-management	Understand and practice strategies for managing thoughts and behaviors	1. Identify and demonstrate techniques to manage common stress and emotions. 2. Identify and describe how feelings relate to thoughts and behaviors. 3. Describe and practice sending effective verbal and non-verbal messages. 4. Recognize behavior choices in response to situations.	1. Identify and develop techniques to manage emotions. 2. Distinguish between facts and opinions. 3. Describe cause/effect relationships. 4. Identify and demonstrate civic responsibilities in a variety of situations (for example, bullying, vandalism, violence). 5. Describe consequences/outcomes of both honesty and dishonesty. 6. Describe and practice communication components (for example, listening, reflecting, responding). 7. Predict possible outcomes to behavioral choices.	1. Identify multiple techniques to manage stress and maintain confidence. 2. Distinguish between facts and opinions, as well as logical and emotional appeals. 3. Recognize effective behavioral responses to strongly emotional situations. 4. Recognize different models of decision making (for example, authoritative, consensus, democratic, individual). 5. Recognize cause/effect relationships. 6. Recognize logical fallacies, bias, hypocrisy, contradiction, distortion, and rationalization. 7. Practice effective communication (for example, listening, reflecting, responding).	1. Identify and evaluate techniques to successfully manage emotions, stress and maintain confidence. 2. Analyze accuracy of facts/information/interpretation. 3. Evaluate quality of support for opinions. 4. Evaluate logical and emotional appeals. 5. Analyze cause/effect relationships. 6. Analyze consequences/ outcomes of logical fallacies, bias, hypocrisy, contradiction, ambiguity, distortion, and rationalization. 7. Apply effective listening skills in a variety of setting and situations. 8. Recognize barriers to effective listening (for example, environmental distractions, message problems, sender problems, receiver problems).

Core CASEL SEL competency	Learning standard example	Grade			
		K-2	3-5	6-8	9-12
Social awareness	Demonstrate awareness of the thoughts, feelings, and perspective of others	1. Identify a range of emotions in others (for example, identify "sad" by facial expression; identify "mad" by tone of voice). 2. Identify possible causes for emotions (for example, losing dog may make you "sad," your birthday may make you "happy"). 3. Identify possible behaviors and anticipate reactions in response to a specific situation (for example, sharing candy may make your classmate smile; taking pencil may make your classmate yell at you). 4. Identify healthy personal hygiene habits.	1. Describe a range of emotions in others (for example, sadness could be frustration, loneliness, disappointment). 2. Describe possible causes for emotions (for example, there may be multiple reasons for one emotion). 3. Describe possible behaviors and reactions in response to a specific situation (for example, list behaviors that a classmate might show after getting in trouble at school). 4. Develop and practice responsibility for personal hygiene, and describe its impact on social interactions.	1. Describe others' feelings in a variety of situations. 2. Discern nonverbal cues in others' behaviors. 3. Summarize another's point of view. 4. Recognize how their behavior impacts others. 5. Recognize the factors that impact how they are perceived by others.	1. Evaluate opposing points of view. 2. Analyze the factors that have influenced different perspectives on an issue. 3. Differentiate between the factual and emotional content of what a person says. 4. Demonstrate empathy for others. 5. Analyze the factors that impact how they are perceived by others in various settings. (For example, job interview, family gatherings, and school activities.)

Core CASEL SEL competency	Learning standard example	Grade			
		K-2	3-5	6-8	9-12
Relationship skills	Develop and maintain positive relationships	1. Recognize how various relationships in life are different. 2. Identify and practice appropriate behaviors to maintain positive relationships (for example, personal space, voice volume).	1. Recognize characteristics of positive and negative relationships. 2. Understand how personality traits affect relationships. 3. Identify safe and risky behaviors in relationships. 4. Understand the positive and negative impact of peer pressure on self and others.	1. Evaluate how relationships impact your life. 2. Understand how safe and risky behaviors affect relationships. 3. Respond in a healthy manner to peer-pressure on self and others. 4. Identify the impact of social media in relationships.	1. Define social networking and its impact on your life. 2. Identify consequences of safe and risky behaviors. 3. Reflect upon personal role in applying and responding to peer pressure. 4. Develop understanding of relationships within the context of networking and vocational careers.
Responsible decision making and problem solving	Consider multiple factors in decision-making including ethical and safety factors, personal and community responsibilities, and short-term and long-term goals	1. Identify and illustrate safe and unsafe situations. 2. State the difference between appropriate and inappropriate behaviors. 3. Explain the consequences and rewards of individual and community actions.	1. Compare and contrast safe and unsafe situations. 2. Identify how responsible decision-making affects personal/social short-term and long-term goals. 3. Identify choices made and the consequences of those choices.	1. Manage safe and unsafe situations. 2. Monitor how responsible decision making affects progress towards achieving a goal.	1. Assess lessons learned from experiences and mistakes. 2. Implement responsible decision making skills when working towards a goal and assess how these skills lead to goal achievement. 3. Utilize skills and habits of applying standards of behavior by asking questions about decisions that students or others make, are about to make, or have made. 4. Evaluate situations that are safe and unsafe. 5. Effectively analyze and evaluate evidence, arguments, claims, and beliefs.

Note: Examples obtained directly from Kansas State Board of Education's Social, Emotional, and Character Development Standards (2012).

Existing SEL programs relevant to *HTFHS*

An environmental scan was conducted to identify programs similar to *HTFHS* in terms of being universal (i.e., not targeted to specific groups of students based on need), school-based, delivered to high school aged youth, and focused explicitly on SEL skill development across several domains. A number of sources were reviewed, including but not limited to:

- 2015 CASEL Guide: Effective Social and Emotional Learning Programs — Middle and High School Edition (CASEL, 2015);

- Handbook of Social and Emotional Learning Research and Practice (Durlak et al., 2015);

- Social and Emotional Learning Interventions under the Every Student Succeeds Act: Evidence Review. Research Report (Hamilton et al., 2017);

- MindMatters Australia Program Guide (2014).

The programs we identified have been divided into three separate groups:

1) Four skills-based SEL interventions for high school-aged youth were similar to *HTFHS* and had evidence of effectiveness[3] (see Table 3 in Appendix); these included three programs developed in the USA, and one in Canada ("The Fourth R"). While two of these programs have adaptations available for students in Kindergarten to Grade 12, one program focuses on Grades 7-12 and the other on Grades 9-12. Three of four programs appear to focus on all five CASEL domains while the fourth focuses on just three domains (self-awareness, relationship skills, and responsible decision-making). The duration of the programs varies (e.g., 80 40-minute lessons, five 1-hour lessons with three booster sessions, seven 45-minute lessons, etc.), though all four are typically implemented within one school year.

   All four programs have associated costs (e.g., for materials, training, licensing) that range from $75 (US) to over $5,000 (US). Overall outcomes in which effects were demonstrated include reduced disciplinary referrals and physical dating violence, improved academic performance (grades in certain subject areas), and increased self-esteem. Most of these effects were found to be short-term.

2) Four skills-based SEL interventions for high school-aged youth were similar to *HTFHS* but lacked evidence of effectiveness (see Table 4 in Appendix). Since all these programs appear to address most if not all of CASEL's five domains, we considered them relevant to *HTFHS*, but the absence of research evidence should be kept in mind when comparing content.

3) Six SEL interventions have been identified as complementary interventions, whereby the program focus is on only two or three CASEL domains (see Table 5 in Appendix). Programs include a focus on yoga, mindfulness, and technology-based approaches (e.g., videos, simulation game). Each of these programs has some evidence for effectiveness, with outcomes ranging from improved academic performance to decreased test anxiety and negative affect, to

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[3] Programs with evidence for effectiveness didn't necessarily have evidence of effectiveness for adolescents in grades 9 or above.

improved working memory capacity and improved global empathy. However, their lack of a comprehensive approach limits their comparability to *HTFHS*, and given the scope of our review, may not represent the most effective interventions in their domain.

Effectiveness of universal school-based SEL interventions

Student outcomes

While several meta-analyses and systematic reviews conducted in the past few years have summarized mounting evidence of the effectiveness of SEL programs for children in primary and middle school, there is much less evidence for programs for adolescents. Not only do most SEL programs target younger children – and are therefore the focus of most of the outcomes research – but effect sizes to date for adolescents aged 14 to 17 have typically been much more modest (Durlak et al., 2011; Heckman & Kautz, 2013). Yeager (2017) proposes several explanations for these disappointing results:

- Programs for adolescents are often 'aged-up' versions of childhood programs and fail to capture adolescents' attention. That does not mean it is impossible to make relevant adaptations of existing programs (even if evidence is not in favour of "revamping"), but it is important to do so in developmentally appropriate ways. Adolescents might also find it condescending to be given information they already have;

- Existing SEL programs may not adequately support adolescents to achieve their psychological needs or development tasks such as: 1) to *stand out* (develop an identity and pursue autonomy), 2) to *fit in* (find comfortable affiliation and acceptance from peers), 3) to *measure up* (develop competence and find ways to achieve, and 4) to *take hold* (make commitments to particular goals, activities and beliefs);

- SEL programs are usually based either on a skills model or on a climate model which focuses on changing the environment (e.g., encouraging teachers to be more supportive). On the other hand, the *mindsets* model sits between the two – depending on the environment in which they grow up, adolescents hold different belief systems or mindsets, which influence whether or not they *use* the skills they have or are acquiring. New SEL programs may look to change mindsets and climate instead of focussing exclusively on skills.

In addition, there are major differences between primary and secondary school settings (e.g., types of interactions with teachers), which present particular challenges rarely discussed in the literature on SEL programs (Lendrum, Humphrey, & Wigelsworth, 2013). Another important missing link in the literature that is particularly relevant for adolescents is the increasing role and/or potential to leverage technology to foster SEL skills (Williamson, Modecki, & Guerra, 2015).

Program dosage

Schools typically do not take a long term approach in promoting SEL – interventions are not intense or lengthy enough to produce sustainable benefits for students (Weare, 2015). According to Weare (2015), while single, brief interventions rarely sustain their impact, some interventions lasting for

six to ten weeks have demonstrated effectiveness in increasing social skills and emotional control, and decreasing milder versions of problems such as conflict and anxiety. However, nine to twelve months are generally needed for interventions aimed at well-being and improving more complex behaviours (Weare & Nind, 2011).

As suggested by Browne and colleagues (2004), the optimal approach to producing long lasting outcomes is an early intensive intervention followed by regularly revisiting core learning in a developmentally appropriate way, and with booster sessions with older students.

Delivery model and school engagement

There is considerable variation across in-class delivery models of SEL programs. In a meta-analysis of 82 studies looking at the impact on positive youth development of school-based SEL interventions (for all age groups), Taylor and colleagues (2017) indicated 39 per cent of interventions were delivered in a classroom setting by school personnel, 27 per cent by non-school personnel, and 23 per cent had a multicomponent format.

The majority of these interventions promoted SEL competencies through a series of structured group lessons lasting between 30 and 45 minutes and only 11 interventions targeted adolescents. Unfortunately, predictors examined by authors in this meta-analysis (intervention format, training procedures and number of sessions) could not provide conclusions about what specific delivery features make SEL interventions more or less effective (Taylor, Oberle, Durlak, & Weissberg, 2017).

In addition, Weare (2015) found that involving parents/caregivers and families makes interventions more effective. Peer education has also been shown to increase the likelihood that interventions for well-being are effective (Adi, Killoran, Schrader MckMillan, & Stewart-Brown, 2007), but pupils need careful preparation and to be mentored so they know their own limitations and when to seek help themselves.

There is an increasing evidence-based literature toward adopting a whole-school approach to SEL programming (Weare, 2015; Durlak et al., 2015; Greenberg, et al., 2017). Indeed, most SEL programs rated as effective or promising by CASEL for high school students are not stand-alone lessons but rather, are embedded into the school's organisational or teaching practices (CASEL, 2015). Many SEL interventions focus on teachers' social-emotional competencies, recognizing that teachers are the engine that drives students' learning (Schonert-Reichl, 2017).

Overall, the literature suggests that SEL practice appears to be evolving beyond classroom-based learning to encompass teaching practices more broadly, as well as integrated and whole school approaches. As CASEL (2015) suggests, the quality of implementation is expected to be closely related to how prepared schools are when they implement SEL programs, the extent to which staff members are involved in participating, and whether or not there is a commitment to training and support.

Lack of reporting on differential effects

Generally, there appears to be no difference in SEL intervention effects among different subgroups such as by gender, ethnicity or SES level (Domitrovich, Sybertsen, & Calin, 2017). In their meta-

analysis, Taylor and colleagues (2017) indicated that there were no differential effects of school-based SEL interventions on positive youth development outcomes at follow-up between white students and students of color and between low- and working-class students compared with those of another SES status.

However, they also noted their analysis was limited by the fact that only a third of the interventions reported the percentage of students in poverty and more than 40 per cent of the 82 studies did not report any specific percentage on ethnicity.

Emerging evidence on broader outcomes

New evidence has been found on more distal outcomes beyond immediate effects on knowledge and attitudes. For example, a recent meta-analysis by Taylor and colleagues (2017) found follow-up outcomes (collected 6 months to 18 years post intervention), which highlighted SEL's enhancement of positive youth development. Researchers found that both social and emotional skill acquisition[4] and improved attitudes about self,[5] others, and school predicted positive indicators of future well-being (positive social behaviours, academic success, fewer conduct problems, less emotional distress and less drug use).

A recent systematic review of universal school-based RCTs also looked at the effectiveness of emotional and social skills to promote well-being. The review included 22 RCTs and revealed that life skills training is generally effective in improving emotional and social skills, and healthy behaviours. While most interventions reviewed embraced best practices in terms of implementation or a whole-school approach, less than half these studies (41%) used standardized measures to assess outcomes or included follow-up data after 6 months (Sancassiani, Pintus, Holte, Paulus, Moro, Cossu, & Lindert, 2015).

Among the programs assessed in the review by Sancassiani and colleagues (2015), two targeted adolescents and presented some similarities with *HTFHS* in terms of content. The first program, *Working Things Out* (from the Social, Personal and Health Education Curriculum in Ireland), was effective mainly for at-risk boys and there were no or limited effects on coping strategies or help-seeking (Fitzpatrick, Conlon, Clearly, Power, King, & Guerin, 2013). For the second program, the *COPE Healthy Lifestyles TEEN (Thinking, Emotions, Exercise, Nutrition)*, there was a positive effect on social skills, cooperation, assertion and academic competence, but no effect on anxiety or depressive symptoms (Melnyk, Jacobson, Kelly, Belyea, Shaibi, Small, & Marsiglia, 2013).

Another review by Corcoran and colleagues (2017) included 40 studies that had high methodological standards from the previous 50 years. These authors found that compared to traditional methods of instruction, SEL interventions had a positive effect on test scores, including reading (effect size = +0.25), mathematics (effect size = +0.26), and) science, though the latter had a small effect (effect size = +0.19). These findings – which were consistent with previous reviews – showed limited meaningful effects overall. Authors proposed conducting more rigorous

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[4] Identifying emotions, perspective taking, self-control, interpersonal problem solving, conflict resolution, coping strategies, and decision-making.

[5] Self-esteem, self-efficacy, and self-concept.

randomized studies with larger samples sizes to confirm these conclusions (Corcoran, Cheung, Kim, & Xie, 2017).

Summary

In summary, little is known about what works to promote SEL for high school students, although we know that high school SEL programming *can* work. More studies are also needed to test the *mechanisms* by which SEL affects outcomes for this age group (Williamson, Modecki, & Guerra, 2015). This means there is limited empirical evidence to further inform *HTFHS* development in terms of evidence-based content or implementation, so decisions will have to be guided more by the theoretical research base and the most promising and relevant practice.

Implications

As we see it, this updated literature review has four sets of implications for the next iteration of *HTFHS*: 1) enhancing the conceptual framework, 2) informing changes in the modules to reflect this updated framework, 3) developing additional guidelines for implementation in schools (including those provided in teachers' training materials), and 4) informing revisions to measures. In addition, the review could inform work being undertaken by SMH ASSIST to address SEL learning needs more broadly, beyond this demonstration project.

The following sections identify priorities we've identified in all four areas, keeping in mind the goal of *enhancing* the resources to be tested in the upcoming outcomes evaluation, rather than making comprehensive or major changes. Where relevant, we have woven in findings from the previous pilot, and have also provided a summary of the changes suggested by participants in that stage of work.

Implications for the *HTFHS* conceptual framework

While other conceptual frameworks have compelling elements, their overall similarities and the continuing dominance of the CASEL framework in the research literature lead us to conclude that adopting a new framework at this point is neither warranted nor feasible within project time constraints. Content of the *HTFHS* resources has already been mapped onto the five CASEL domains, and it remains a useful lens for this work.

That said, there are competency areas from other frameworks that should guide future revisions to *HTFHS* content, and opportunities to address the gaps and limitations in other existing frameworks. We see the most important of these as being:

- **A more explicit emphasis on adolescents' stage of development** – particularly related to the subdomains identified by Berg et al. (2017) as important to adolescents (autonomy, relational self, intimacy/attachment, resourcefulness, and coping/resilience) and the four psychosocial tasks of adolescence (i.e., "to stand out", "to fit in", "to measure up", and "to take hold"). This includes making it clear to students that they have already built SEL skills and that *HTFHS* is an opportunity to refresh and enhance these, in light of the unique needs, tasks, issues, and stressors adolescents face. This could also include a more explicit emphasis on "wayfinding," identifying opportunities, and transitions, which participants in the pilot study (students and educators) did not find apparent;

- **Integrate equity considerations** in terms of considering different types of barriers adolescents might face interacting with this material and in their SEL development overall. Consider how cultural competence and safety can be addressed in both content and delivery, particularly for racialized and other minority or marginalized groups. The 2017 report by Berg and colleagues (2017), for example, includes competencies in Critical-mindedness, Communalism, and Fairness, and Working in diverse teams (see Table 2 below);

Table 2   Other social emotional competencies of interest for *HTFHS*

Social emotional competencies	Definition	Framework
Work effectively in diverse teams	Respect cultural differences and work effectively with people from a range of social and cultural backgrounds; leverage social and cultural differences to create new ideas and increase both innovation and quality of work	Framework for the 21st Century Learning (Partnership for 21st Century Learning, 2015, p. 21)
Critical-mindedness	Helps protect against experiences of discrimination and facilitates a critique of existing social conditions	Resilience in African American Children and Adolescents: A vision for optimal development (American Psychological Association Task Force on Resilience and Strength in Black Children and Adolescents, 2008)
Communalism	Importance of social bonds and social duties. Drives for the connection and promotion within and cross diverse groups	
Fairness	Treating all people the same according to notions of fairness and justice; not letting personal feelings bias decisions about others; giving everyone a fair chance	Values in Action Classification (Peterson & Seligman, 2004)

Adapted from Berg and colleagues (2017).

- Adopt **an ecological, contextually responsive approach** that goes beyond school settings and traditional 'static layers' that do not interact together. While *HTFHS* is intended to support classroom delivery and is by itself not a whole-school approach to SEL, there may nevertheless be ways to make links to broader organizational or teaching practices in content revisions. More importantly, *HTFHS* needs to broaden its frame of reference to include recognition of broader community and social influences (e.g., political, economic, cultural) on SEL development for adolescents, and appropriate/effective ways for them to demonstrate SEL skills.

Many of these elements could be built into content revisions with a more explicit focus on the fifth CASEL domain, responsible decision-making, as in the Kansas State Board of Education's (2012) learning standards.

Implications for *HTFHS* content

Again, we recognize that major revisions to the content of *HTFHS* resources are not planned, not only for practical reasons but also because the content to be tested in the impact evaluation should ideally not deviate too much from that whose design and delivery were tested in the pilot.

The following recommendations flow from the revisions to the conceptual framework suggested above, and from recommendations from pilot project participants (see Appendix B). Specifically, we feel the following changes could be made without modifying the original content too much:

▪ Modify existing **examples and/or activities more connected to the lives of Grade 10 students**. For instance, several causes of emotional pain are discussed with students in Module 7 (e.g., a parent has a problem and it's affecting you, major change in your family, etc.). Other causes linked with the developmental tasks proposed above could be added, such as someone talking behind your back about rumors, feeling of not having a sense of purpose, feeling inadequate or awkward, failure to establish a relationship with someone we like, etc. Similarly, examples that relate to adolescents' concerns re: intimacy and attachment in a developmentally appropriate way would enhance overall relevance of the resources.

▪ Likewise modify examples to include **more reference to Indigenous, racialized and other marginalized groups**, and address more explicitly how SEL relates to their needs, concerns, and priorities.

▪ Add **new content related to autonomy and relational-self domains**: These two domains are currently under-developed in *HTFHS*. However, the research literature shows how important the development of autonomy and identity are for adolescents. Additional content could be developed in terms of developing skills related to those domains. Add Self-direction ("Wayfinding abilities" from the MyWays Framework) and Personal and cultural identity (from BC's redesigned curriculum)?

▪ **Focus on changing mindsets, not just teaching skills**. The overall tone of the resources should be adjusted to help students appropriate the material in a more autonomous fashion, to a) decrease the potential feeling of an "adult telling me what I need to think and do" and b) focus on "where and how I can use these skills effectively."

▪ **Provide more opportunities for in-depth learning**, including resources and extension activities for those who want them, as suggested by participants in the *HTFHS* pilot (see Table 6 in Appendix B).

Implications for *HTFHS* delivery

There are fewer implications from the updated literature review for the *HTFHS* delivery model than for the conceptual framework and content of the resources. If anything, the review supports the current model of more rather than fewer modules, so testing the existing nine modules in the impact evaluation seems appropriate. Future work should consider the potential for booster sessions in later grades, and for complementary materials (e.g., for parents).

Clearly, training of participating educators needs to adjust to account for any revisions made to content, and to underscore some of the priority principles inherent in the framework. Given the research findings that SEL programming can be particularly effective when families, near-peers and others are involved, training could identify which modules might lend themselves to either extension activities at home, or to guests assisting with delivery. This also occurred during pilot

delivery in a few schools, when guidance counselors were asked to help with certain aspects of
delivery.

Implications for *HTFHS* assessment and evaluation

For the most part, the measures used in the pilot project can continue to be used to assess the
effectiveness of *HTFHS* in the impact evaluation, particularly given that the underlying conceptual
framework is not being changed. That said, the measurement of SEL is an emerging field, and there
may be better alternatives to some of the measures in specific skill areas – further research on
measurement in each domain is needed.

Clearly, new measures will also be needed for adapted or additional material, and consideration
should be given to assessing dosage more objectively with attendance records, rather than by
student self-report, as was done in the pilot. The implementation checklists used in the pilot will
also be of use here. Consideration should be given to the feasibility of collecting data on more distal
effects, such as academic performance, risky behaviour, and mental health and well-being.

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Appendix A: Evidence-based SEL programs

Table 3   Skills-based SEL interventions for high school-aged youth with evidence of effectiveness[6]

SEL-education program	Grade range covered	Core SEL skills addressed	Format, recommended training model and implementation	Evidence of effectiveness[7]	Outcomes demonstrating effects	Reference	Notes
School-Connect (USA) (http://www.school-connect.net/)	9-12	▪ Self-awareness ▪ Self-management ▪ Social awareness ▪ Relationship skills ▪ Responsible decision-making	▪ Uses teaching practices ▪ Implemented by teachers ▪ Designed to improve social, emotional, and academic skills and create supportive relationships among students and between students and their teachers ▪ Variety of delivery formats: freshman seminars, grade level advisories, academic courses, special education classes, alternative education programs, and positive youth development initiatives ▪ One- or two-day staff training for effective implementation ▪ 80 lessons distributed over four curriculum modules, ~45 min per lesson ▪ License fee for Modules 1-4 is a $5,000 (US) base price per school plus $3 (US) per student for all students grades 9-12. Additional School Lesson License Guides are $59 (US) per teacher	▪ Quasi-experimental study ▪ 947 high school students, 9th grade (Hispanic = 63%, White = 18%, Black = 15%) ▪ School-Connect students had significantly fewer discipline referrals for class disruption ($p < .001$, $d = .22$) and rudeness to an adult ($p < .01$, $d = .17$), and relatively higher math grades ($p = .05$, $d = .13$) and average core subject pass rates ($p < .05$, $d = .13$) than the no treatment control students at 9th grade post-test. They also had marginally higher average core grades when controlling for pre-test grades ($p = .08$, $d = .11$). At six-month follow-up, School-Connect students had significantly lower overall discipline referral rates ($p < .01$, $d = .22$) and relatively higher average social studies grades ($p < .001$, $d = .43$). However, the treatment students also had lower average math and English grades than the control group ($p < .01$, $d = .18$ $p < .01$, $d = .19$), which is why the program was designed by CASEL as "Promising"	▪ Disciplinary referrals ▪ Academic performance	Hutson, Bleland, & Douglass (2016)	CASEL Designation: "Promising Program" (CASEL, 2015)

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[6]   Inclusion criteria: Programs similar to *HTFHS* (school-based, teachers as implementers, focused on SEL education) and focus on grades 9 and above. Exclusion criteria: Programs focused on drug education, bullying (e.g., cyber-bulling), or targeted interventions that focus on "at-risk" youth.

[7]   This is not an exhaustive list of all studies of effectiveness for each program.

SEL-education program	Grade range covered	Core SEL skills addressed	Format, recommended training model and implementation	Evidence of effectiveness[7]	Outcomes demonstrating effects	Reference	Notes
Student Success Skills (USA) (http://studentsuccessskills.com/)	K-12	▪ Self-management ▪ Self-awareness ▪ Social awareness ▪ Relationship skills ▪ Responsible decision-making	▪ Uses teaching practices ▪ Implemented by teachers or counsellors ▪ Provides students with strategies for: (1) setting goals, monitoring progress, and sharing success; (2) building a caring, supportive, and encouraging environment; (3) developing and practicing memory and cognitive skills; (4) calming anxiety and managing emotions; and (5) developing healthy optimism ▪ Free-standing SEL lessons (5 1-hour sessions and 3 booster sessions) ▪ 1 day training/coaching ▪ $75 (US) per manual ▪ Extension of the program in G12 called College/ Career Success Skills (CCSS) to prepare student to develop the academic, social and self-management skills to meet the 21st century college and career readiness demands)	▪ Two-level cluster randomized trial design ▪ 193 study participants from 11 grades 7 and 8 classrooms (six treatment and five control) (Hispanic=66.3%, White=19.7%, Other=7.8%, Native American= 3.6%, African American =2.1%, Asian American=0.5%) ▪ Controlling for pretest performance and demographics: students in the intervention classrooms scored significantly higher than students in the control classrooms on both the math and reading measures of academic achievement, had lower average scores for all of the executive functioning subscales, with the exception of Inhibit, Monitor, and Working Memory. Finally, they had higher average scores for one of the social support subscales, Classmate Support. Effect sizes for the statistically significant intervention effects ranged from .29 to .66	▪ Academic performance ▪ Social support	Lemberger, Selig, Bowers, & Rogers (2015)	CASEL Designation: "Select Program" (CASEL, 2015)

SEL-education program	Grade range covered	Core SEL skills addressed	Format, recommended training model and implementation	Evidence of effectiveness[7]	Outcomes demonstrating effects	Reference	Notes
The Fourth R (Canada) (https://youthrelationships.org/)	7-12	▪ Self awareness ▪ Relationship skills ▪ Responsible decision making	▪ Uses teaching practices ▪ Free-standing SEL lessons ▪ 3 units (7 lessons per unit, lessons are 75 min each or 2 short lessons) ▪ Unit 1 teaches relationship skills, social awareness and self-awareness, and decision-making skills ▪ Emphasis on communication skills supported by elaborate role plays ▪ Five-hour training usually conducted in-person and onsite, although an online version is also available. In-person training recommended whenever a school or district intends to train ten or more teachers (with a maximum of 60) ▪ Grade 9 curriculum costs $90. For Teacher Training, price ranges from $500-1,500 plus travel fees for the trainer, and teacher supply costs paid by the host board/district. In most cases schools or districts are encouraged to request a site license for the Fourth R that allows them to use the materials repeatedly and have free access to the online training. (Price is based on number of students)	▪ Randomized control trial ▪ 1,722 adolescents in ninth grade (predominantly white) ▪ Physical dating violence was greater in control vs intervention students (9.8% vs 7.4%; adjusted odds ratio, 2.42; 95% confidence interval, 1.00-6.02; P = .05). A significant group x sex interaction effect indicated that the intervention effect was greater in boys (PDV: 7.1% in controls vs 2.7% in intervention students) than in girls (12.1% vs 11.9%). Main effects for secondary outcomes were not statistically significant; however, sex x group analyses showed a significant difference in condom use in sexually active boys who received the intervention (114 of 168; 67.9%) vs controls (65 of 111 [58.6%]) (p < .01)	▪ Physical dating violence	Wolfe, Crooks, Jaffe, Chiodo, Hughes, Ellis, & Donner, 2009	Complementary Program (CASEL designation); majority of SEL programming is contained in 1 unit (CASEL, 2015)

SEL-education program	Grade range covered	Core SEL skills addressed	Format, recommended training model and implementation	Evidence of effectiveness[7]	Outcomes demonstrating effects	Reference	Notes
Positive Action (USA) (https://www.positive action.net)	K-12	- Self awareness - Self management - Social awareness - Relationship skills - Responsible decision-making	- Classroom curriculum designed to promote a healthy self-concept and to establish positive actions for the body and mind. The program emphasizes effective self-management, social skills, character, and mental health, as well as skills for setting and achieving goals - Core curriculum consists of six units that are taught in a year - Four kits are available for high school grades 9 through 12. Each kit is unique and contains 132 scripted, 15- to 20-minute minute lessons, plus activity sheets, games, manipulatives, posters, 30 student texts and journals - Additional program components support classroom-wide, school-wide, family, and community involvement - Initial training typically lasts one-half day to five days, and is not required. A train-the-trainer system is offered to support sustainability - Each High School Kit is $400 (US) and Online Orientation Training is $500 (US)	- Cluster randomized control trial 1,170 students (K to grade 8) participated in the study (53% female, 48% African American, and 27% Hispanic) - Students in schools that received Positive Action showed more positive change over time on the measures of peer self-esteem (B = 0.04, p = .01; effect size = 0.37), school self-esteem (B = 0.04, p = .003; effect size = 0.46), and use of adaptive self-esteem formation and maintenance strategies (B = 0.03, p = .046; effect size = 0.31)	Peer self-esteem, school self-esteem, and use of self-esteem formation and maintenance strategies	Silverthorn, DuBois, Lewis, Reed, Bavarian, Day, & Flay, 2017	SELect Program (CASEL designation) for elementary schools (CASEL, 2015)

Table 4   Skills-based SEL interventions for high school-aged youth lacking evidence of effectiveness[8]

SEL-education program	Grades	Core SEL skills addressed	Format, recommended training model and implementation	Notes
My Life – It's Cool to Talk About It /Ma vie, c'est cool d'en parler! (Quebec, Canada) (www. acsmmontreal. qc.ca)	Not grade-specific. Ages 12-18 years	Focus on: Personal and social skills, including self-esteem, stress management and problem solving. Overlaps with five CASEL domains: ▪ Self awareness ▪ Self management ▪ Social awareness ▪ Relationship skills ▪ Responsible decision making	▪ Web based teaching tool ▪ Designed to help youth manage their mental health by encouraging them to talk about their problems and seek help for any mental health issues they may be experiencing ▪ Two key components: educational tools and practical activities for teachers and parents who are in daily contact with youth at school and at home. High school students can access information on topics such as self-esteem, bullying, homophobia, and suicide ▪ Other educational material helps them better understand stress and its effects and the importance of maintaining their mental health. Another important part of the program is an online self-assessment quiz ▪ Training N/A	Bilingual campaign
A.C.E. Well Being (Australia) (https://www.mindmatters.edu.au/)	7-10	Focus on: Skills for resilience and personal and social responsibility. Overlaps with five CASEL domains: ▪ Self awareness ▪ Self management ▪ Social awareness ▪ Relationship skills ▪ Responsible decision making	▪ Program aims to help children build resilience and equip them with positive coping skills ▪ Delivered to students through 10 weekly sessions. Each session runs for a 40-minute to one-hour duration ▪ A facilitator PowerPoint and student workbook form the basis of each session, and students engage in interactive discussions, structured group activities, and role plays to practice new skills. A parent information session and parent hand out is also incorporated into the program ▪ Program focuses on Awareness, Commitment and Empowerment to engage in positive relationships with self and all living being through values based action ▪ Professional development is available to teachers and school staff. Training includes a compulsory one or two day workshop for all staff with a maximum of 20 participants for $5,495 (AUD). The ACE Wellbeing training for child and youth is 4 hours for a cost of $250 (AUD) per attendee, with a minimum of 4 attendees ▪ ACE Wellbeing Adult Program Delivered to all school staff is approx. $290 (AUD) per participant. Add on for the youth ACE Wellbeing Resilience Program is $99 (AUD) ▪ The program is available through GAPP Solutions	Statistical analyses of the student pre- and post-evaluations are currently underway. The program is based on the theoretical frameworks of cognitive behaviour therapy, social learning theory and mindfulness. Evidence based techniques include positive reminiscing, awareness attention training, challenging unhelpful thoughts, building connections, problem solving strategies and conflict resolution and assertiveness training.

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8   Inclusion criteria: Programs similar to *HTFHS*. No peer-reviewed studies have been conducted and/or results are not available.

SEL-education program	Grades	Core SEL skills addressed	Format, recommended training model and implementation	Notes
Like it Is (Australia) (https://www.abccommercial.com/librarysales/program/it?width=644&height=410&inline=true#mediaplayer_container)	8-10	Focus on: Skills for resilience, and personal and social responsibility. Overlaps with five CASEL domains: ▪ Self awareness ▪ Self management ▪ Social awareness ▪ Relationship skills ▪ Responsible decision making	▪ 8 part DVD series that explores issues that concern young people and presents strategies to help them manage their lives ▪ Interviews and real life situations give the programs meaning, and a music video clip production style helps to engage the audience ▪ Key skills: Optimistic self-talk, Decision-making, Communication skills, Help seeking ▪ Duration: 8 episodes, 20 minutes each ▪ Standard cost is $275 (AUD) and cost for schools is $198 (AUD) ▪ Training N/A ▪ This program is released for non-theatrical use within educational, government and business organizations. Additional payments under a Screenrights licence are not required	
Choose Love Enrichment Program (USA) (https://www.jesselewischooselove.org/about-us/)	Pre-K -12	▪ Self awareness ▪ Self management ▪ Social awareness ▪ Relationship skills ▪ Responsible decision making	▪ No cost, downloadable, evidence-based social and emotional (SEL) classroom program teaching children how to choose love in any circumstance ▪ Program focuses on four important character values – Courage, Gratitude, Forgiveness and Compassion in Action – which cultivates optimism, resilience and personal responsibility. Included elements are positive psychology, mindfulness, neuroscience, and character values	According to website: ▪ More than 6,672 educator downloads in all 50 states + DC ▪ More than 50 countries ▪ 1,318,922 estimated student's reached ▪ 100% of survey respondents said they have seen an improvement in classroom climate and in students' overall behaviour ▪ More than 95% of survey respondents said they would use the program again or recommend it to other educators

Table 5   Complementary SEL interventions for high school-aged youth[9]

SEL program	Grades	Core SEL skills addressed	Format, recommended training model and implementation	Evidence for effectiveness	Outcomes demonstrating effects	Reference	Notes
Pure Power (USA) (http://pureedgeinc.org)	K-12	▪ Self-management ▪ Self-awareness	▪ Mindful movement curriculum (free-standing lessons) ▪ 5 days-training and coaching ▪ 5 units that build on one another: Power to Shine, Power of Mindfulness, Power of the Brain-Body Connection, Power of a Balanced Life, Toolkit for a Balanced Life	▪ Randomized control trial ▪ 112 students in one school, grades 9-11th (Hispanic = 59%, Black = 22%) ▪ The primary outcome was mean annual grade point average (GPA) and psychosocial variables (self-regulation, executive function, well-being, and mindfulness) were examined as mediators. The study's primary hypothesis that yoga would improve academic performance was not supported by intent to treat analysis; however, a significant interaction was observed between class assignment and class participation ▪ Among students with higher participation, those assigned to yoga classes had a significantly higher GPA. For example, at 49 classes of participation for both groups, students assigned to yoga classes had an estimated 2.70 higher mean GPA (effect size=0.31) than students assigned to physical education	▪ Academic performance (GPA)	Hagins & Rundle, 2016	Complementary Program (CASEL designation); (CASEL, 2015)

[9] Inclusion criteria: Programs with evidence for effectiveness that are different from *HTFHS* (not focused on explicit, holistic SEL skill development). Excluded violence prevention and conflict management programs.

SEL program	Grades	Core SEL skills addressed	Format, recommended training model and implementation	Evidence for effectiveness	Outcomes demonstrating effects	Reference	Notes
TestEdge (USA) (https://www.heart math.org/education /classroom-programs/)	3-5, 6-8, 9-12	▪ Self-management ▪ Self awareness ▪ Responsible decision-making	▪ Program delivered in classroom via video in which teen actors present the information ▪ Stress reduction program that teachers students how to deal with daily stress by using breathing relaxation tools ▪ Five free-standing lessons via video (teenage actors present the information) ▪ 3 tools taught: calming down in stressful situations, changing a feeling/attitude from negative to positive, solving problems by staying calm and using intuition ▪ 1/2 day training for a school teacher or counsellor ▪ No cost information available on TestEdge Program (and associated training). HeartMath Institute has a classroom license for blended online/classroom SEL program (ages 9-16) which costs $99 (US)	Randomized control trial ▪ 749 adolescents in 10th grade (White = 43%; Hispanic = 36%; Other = 21%; approximately 14.3% of participants qualified for free or reduced lunch ▪ Students participating in the intervention reported lower levels of test anxiety, negative affect, emotional discord, and interactional difficulty at post-test compared to students from the control group. Of those students at the intervention school who had reported being affected by test anxiety at the beginning of the study, 75% had reduced levels of test anxiety by the end of the study	▪ Test anxiety ▪ Negative affect ▪ Emotional discord ▪ Interactional difficulty	Bradley, McCraty, Atkinson, Arguelles, Rees, & Tomasino (2007)	CASEL Designation: "Complementary Program" due to limited focus on social awareness and relationship skills, and it is designed to be delivered in a single school year. (CASEL, 2015)

SEL program	Grades	Core SEL skills addressed	Format, recommended training model and implementation	Evidence for effectiveness	Outcomes demonstrating effects	Reference	Notes
Mindful Schools (USA) (https://www.mindfulschools.org)	K-12	Focus on: Positive school community, Skills for resilience, Personal and social responsibility. Overlaps with five CASEL domains: ▪ Self awareness ▪ Self management ▪ Social awareness ▪ Relationship skills	▪ Curriculum designed to be used by teachers or health professionals who complete the required curriculum training (6-12 week courses available) ▪ Focus on building attention, self-regulation, and empathy	▪ Program has sound program logic, and effectiveness is somewhat demonstrated by a large randomized-controlled study on the implementation of Mindful Schools across 3 schools in 2012 involving 937 children and 47 teachers. ▪ With just 4 hours of mindfulness instruction for the students – a very small, low-cost dose – the students in the treatment group made statistically significantly larger improvements in their mental ($Z_3 = -2.89$, p $_4$ = .004, r $_5$ = -0.10) and physical behavior ($Z = -2.23$, p = .026, r = -0.08) than did the students in the control group. In contrast, there was no difference in emotional ($Z = -0.25$, p = .80, r = -0.01) or social ($Z = -1.34$, p = .165, r = -0.05) behavioral changes of the students in the two groups. ▪ The long term effect was suggestive but not statistically significant.	▪ Mental (attention) and physical behaviour (participation in class activities)	Smith, Guzman-Alvarez, Westover, Keller, & Fuller, 2012	
Mindfulness training (USA)	1-3rd, 5th-8th	▪ Self awareness ▪ Self management ▪ Relationship skills ▪ Social awareness	▪ Classroom curriculum ▪ Implementation support ▪ Special populations: Racial/ethnic minority, low SES, urban ▪ Implementers: *Experienced instructors with extensive mindfulness experience	▪ Randomized control study (mindfulness, hatha yoga, no treatment groups) ▪ 198 adolescents from middle school (12-17 years) ▪ Mindfulness meditation group reported significant pre-post improvements in working memory capacity, $F(1,50)=15.71$, p < .001, whereas participants in the hatha yoga and waitlist control groups did not [hatha yoga: $F(1,59)=3.85$, p =.11, waitlist: $F(1, 51) =.50$, p =.46].	▪ Working memory capacity	Quash, Mano, & Alexander, 2016	

SEL program	Grades	Core SEL skills addressed	Format, recommended training model and implementation	Evidence for effectiveness	Outcomes demonstrating effects	Reference	Notes
Yoga (USA)	4-6, 9, 11-12	▪ Self awareness ▪ Self management ▪ Social awareness ▪ Relationship skills	▪ Classroom curriculum ▪ Changing the learning environment ▪ Professional development ▪ Implementation support ▪ Website ▪ Implementers: Teachers and support staff ▪ Special populations: Racial/ethnic minority, low SES, urban/rural	Study that focused on grades 8+ (with yoga instructor as implementer): ▪ Randomized control trial ▪ 159 sixth (53.3%) and ninth grade (44.7%) students (16.8%=African American, 5.8% =White, 1.3% = Asian, 54.2% = Latino, 21.9% i=mixed racial background) ▪ As compared to control, students in the intervention condition had significantly fewer unexcused absences ($F(1, 142)$ = 9.16, p = .01; d = −0.86), fewer detentions ($F(1, 142)$ = 5.52, p = .05; d = −0.33), and higher levels of school engagement ($F(1, 142)$ = 9.76, p = .01; d = 0.45). Statistically significant effects were found on measures of primary coping ($F(1, 142)$ = 12.39, p = .02; d = 0.15) and emotion regulation ($F(1, 142)$ = 4.90, p = .05; d = 0.12). Statistically significant effects were also found on measures of secondary coping ($F(1, 142)$ = 9.75, p = .01; d = 0.14), constituent measures of positive thinking ($F(1, 142)$ = 5.75, p = .05; d = 0.13), and cognitive restructuring ($F(1, 142)$ = 11.65, p = .01; d = 0.20).	▪ Unexcused absences, detentions ▪ School engagement ▪ Primary coping ▪ Emotion regulation ▪ Secondary coping ▪ Positive thinking ▪ Cognitive restructuring	Frank, Bose, & Schrobenhauser-Clonan, 2014	

SEL program	Grades	Core SEL skills addressed	Format, recommended training model and implementation	Evidence for effectiveness	Outcomes demonstrating effects	Reference	Notes
Real LIVES (USA) (http://www.educationalsimulations.com)	9-10	▪ Social awareness	▪ REAL LIVES is a simulation game implemented as part of classroom curriculum that allows players to inhabit the lives of individuals around the world ▪ Implementers: Teachers and Support staff ▪ Note: computerized simulation	▪ Quasi-experimental classroom study of 301 Northern California high school students in three schools examined the effects of playing REAL LIVES ▪ Students who played the simulation game as part of their curriculum scored significantly higher (M = 50.47) in post-test global empathy compared to those in the control group (M = 48.99) ▪ Students in the treatment group were also more likely to want to learn more about the lives of people in other countries (M = 19.04) than the control group (M= 17.16) These findings support claims that computerized simulations can cultivate important dispositions for global learning and citizenship	▪ Global empathy, interest in other countries	Bachen, Hernández-Ramos, & Raphael, 2012	

Appendix B: Feedback from *HTFHS* pilot participants

Table 6   Proposed changes to the *HTFHS* resources by category of participants (from *HTFHS* pilot)

Areas	Students[10]	Teachers	Mental health leads	School administration
Current content				
More culturally-relevant information throughout (First Nations, immigrants)			x 2	x 1
More examples in the resources to reflect possible sub-groups of students (e.g., special needs, youth at risk, First Nations, LGQBT students, immigrants, etc.)		x 2	x 2	
More group or interactive activities	x 2 FG			
Add more in-depth information on each existing topic, especially for more advanced students (e.g., statistics, coping mechanisms, how you know you are improving in your mental health, peer support, creating good mental health habits)	x 2 FG	x1	x 2	
Module 8: Include more complicated lateral thinking puzzles	x 2 FG	x1		
Add more videos, accompanying app, or other media tools related to existing content		x1		x 1
Include more mindfulness activities (not shared by everybody)	x 2 S		x1	
Wrap up activity or longer term project throughout the modules (e.g., journal, writing something good about someone regularly, etc.) to reinforce knowledge acquisition	x 1FG	x 1	x1	

[10]   FG: Relatively unanimous in indicated number of focus groups; S: Number of individual students who proposed changes.

Areas	Students[10]	Teachers	Mental health leads	School administration
Reinforcing stress reduction strategies (especially to manage school issues)	x 3 FG	x1		
Additional content				
Expand the material (more modules)	x 1FG	x 2		
More information on mental health illnesses (e.g., risk factors, signs and symptoms, treatment, etc.) – Most mentioned were depression and anxiety	x 3 FG	x 1	x 1	
Well–being and cyber technology (e.g., cyber bullying, navigating online presence)		x 1	x 1	
Add a parental component (e.g., one-time meeting)		x 1		x 1
Healthy (and unhealthy) relationships with peers, family or romantic relationships (e.g., bullying, peer pressure)	x 2 FG		x 1	
Teachers' guidelines for delivery				
Allowing flexible delivery (allow teachers to adapt timelines for delivery)				x1
Create a comfortable and safe space for students (e.g., offer to share comments anonymously on specific topics, open-minded climate)	x 2 FG			
How to deliver successful mindfulness activities and how mindfulness differentiates from Christian meditation		x 2		x 1
Guidelines for special needs students (e.g., smaller classes, more interspersed lessons)				x 1

Areas	Students[10]	Teachers	Mental health leads	School administration
How to tailor resources to the school population		x 1	x 1	x 1
Add opportunity for assessments/assessment tools		x 2		
Guidelines for smaller communities or communities who may have issues in terms of confidentiality and limited availability of mental health resources (implication from other findings)				
Guidelines where additional in-class supports (e.g., guidance counselors, near-peers) may be appropriate (implication from other findings)				

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