

# Learning Resilience

*Supporting  
evidence*



# Supporting evidence for the Be You Professional Learning

## Learning Resilience domain

This review has been developed to support the **Learning Resilience** domain of Be You Professional Learning. It provides an overview of the research and evidence underpinning each of the learning modules and allows you to further engage with the key themes and advice.

The review provides an overview of the research examining the relationship between social and emotional learning skills and wellbeing in children and young people. It also identifies proven strategies that educators can use to help children and young people to build social and emotional learning skills and resilience.

Educators will best engage with this review if read in conjunction with the Professional Learning modules in the **Learning Resilience** domain.

Suggested citation: Ciarrochi J, Gordon C and Jones S. Learning Resilience, and Social and Emotional (SEL) Skills: an Evidence Check rapid review brokered by the Sax Institute ([www.saxinstitute.org.au](http://www.saxinstitute.org.au)) for Be You, 2019.



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# Glossary

## Acronyms and abbreviations

CBT	cognitive behavioural therapy
QoL	quality of life
SAFE	sequenced, active, focused and explicit
SDT	self determination theory
SEL	social and emotional learning
RCT	randomised controlled trial

## Glossary of terms

Behavioural activation	Using methods to encourage people to engage in pleasurable activities, or activities they value, even if they feel unmotivated or depressed.
Broaden and build theory	This theory suggests that positive outlook and wellbeing broadens awareness, drives approach and exploratory behaviour, and expands skills and social networks. This “expansion” results in greater positive outlook and well-being.
Creative bibliotherapy	Using narrative materials such as fiction or poetry for improving mental health and wellbeing.
Decoupling	Unlinking unhelpful thoughts from behaviour.
Distancing (or self-distancing)	Taking an outsider’s views of one’s own situation.
Emotion regulation skills	The ability to respond to situations with a range of emotions, in a way that is socially acceptable.
Executive function and self-regulation skills	The mental processes that enable us to plan, focus attention, remember instructions, and juggle multiple tasks successfully.
Growth mindset	The understanding that abilities and intelligence are not fixed but can be developed.
Mindfulness	Awareness that comes from paying attention to present moment experience with an intentional and non-judgmental manner, for the sake of cultivating self-awareness, wisdom, and self-compassion.
Negative affect	A negative state, where a person tends to focus only on what they think is the threat, and nothing else.
Perspective-taking	Viewing a situation from another’s point-of-view, or from a broader perspective than simply the self.
Positive affect	How much a person experiences positive moods such as joy and interest in daily life.



Pro-social behaviour	Voluntary behaviour intended to benefit another; empathy and positive behaviour towards others.
Psychopathology	May refer to the study of mental illness or the signs/symptoms of mental illness.
Reappraisal	Reinterpreting a situation in a more useful way.
Social capital	Networks of relationships among people who live and work in a particular society, enabling that society to function effectively.
Social competence	The ability to handle social interactions effectively.
Somatic complaints	Unexplained symptoms of illness.
Value affirmation	Involves identifying what is important to the person and then engaging in behaviours in line with those values.



# Executive summary

## Background

This review examined the latest evidence on the relationship between social and emotional learning skills and wellbeing in children and young people. It also sought to identify strategies that educators can use to help children and young people to build social and emotional learning skills and resilience. The key findings, based on reviews of relevant peer-reviewed literature published since 2014, are outlined below.

## Key findings

### **Question 1: What is the relationship between social and emotional learning skills and mental health and wellbeing in children and young people?**

The research suggests a clear and significant link between wellbeing and specific aspects of social and emotional learning (SEL) skills in children and young people, including resilience, self-confidence and the skills of identifying and regulating emotions. The benefits of SEL skills are wide-reaching. They are linked to lower levels of mental health issues, anxiety and depression, and higher levels of life satisfaction and positive affect. In addition, there is strong evidence that social and emotional learning interventions promote wellbeing and resilience among children and adolescents. SEL skills are clearly important and can be taught.

### **Question 2: What strategies have been effective for educators to support children and young people to build social and emotional learning skills?**

This question was broken down into two parts. First, how can schools best implement multi-component SEL interventions? Second, what are the key components of a successful SEL intervention?

The review of research found that multi-component SEL interventions – that is, interventions that target more than one skill area – are most likely to be successful to the extent that educators do each of the following:

1. use the SAFE procedure (interventions are Sequenced, Active, Focused, Explicitly targeting core SEL skills)
2. make SEL materials both age- and culturally-appropriate
3. provide sufficient support and training for those implementing the intervention
4. take a strengths-based approach (e.g. helping youth to be their best self)
5. regularly evaluate the program for effectiveness.

Successful SEL programs generally implemented some or all of the following six strategies:

- **Strategy 1: Support student values/needs.** SEL programs helped children and young people to recognise what they value and need (short and long term) and supported them to engage in behaviours that supported their needs in relation to autonomy, competence, and connectedness.



- **Strategy 2: Help young people use language wisely and pragmatically.** SEL programs helped children and young people make use of the upsides of language (e.g. effective problem-solving), while minimising some of the downsides of language (e.g. excessive worry, rumination, self-judgment). This strategy included interventions that built hope and self-esteem, as well as those that taught problem-solving and willingness to act even in the presence of discouraging thoughts or feelings ('decoupling').
- **Strategy 3: Help young people to become more mindful (aware and non-reactive).** SEL programs helped children and young people to become more mindful (aware, able to identify feelings, non-reactive to feelings and impulses). Mindfulness interventions had substantial evidence backing them, and had widespread benefit. For example, mindfulness interventions had potential to improve thinking processes (Strategy 2) and perspective-taking and pro-social behaviour (Strategy 5).
- **Strategy 4: Help young people broaden and build their skills and social networks.** SEL programs helped children and young people to broaden and build their skills and social networks. The research suggests that simple exercises involving expressive writing and art can help youth see their difficult experiences and hardships in new ways. Safe, nurturing environments can encourage youth to take on more challenges and broaden their social networks.
- **Strategy 5: Teach young people perspective-taking skills.** SEL programs taught children and young people to take perspective, viewing themselves and others from a wise and often kind perspective. The findings suggest that even very young children can learn to see their difficult situation from a 'wise' distance and become less reactive to that situation.
- **Strategy 6: Apply the first five strategies to groups, as well as the individual within those groups.** SEL programs often applied the above five principles in group settings. Young people naturally like to work and learn with their peers. In the group setting, SEL educators can clarify the group values (Strategy 1), form useful group rules (Strategy 2), help group members to be aware of how they act, think and feel in the group (Strategy 3), encourage the development of new group behaviours (Strategy 4), and encourage young people to guess how other group members are thinking, feeling, and valuing (Strategy 5). This builds the social capital of children and young people, as well as their individual resilience skills.

## Gaps in the evidence

While there was strong evidence for the benefits of multi-component SEL interventions, there was insufficient evidence on what aspects of the interventions were most and least effective. There was also insufficient evidence on what interventions work for specific individuals in specific school and community contexts. For example, do the same interventions work in low socio-economic status (SES) versus high SES schools, mixed gender versus same sex schools, and schools with different levels of minority students? The research has yet to address these questions. It is recommended that further research be focused more at the individual level, using methods that examine the possibility that different intervention components may work differently with different youth (for example, see study by Hayes et al. 2019 (1)). For example, it may be some SEL skills, like value clarification and affirmation, are particularly important for minority students (2).

Finally, there is still too little research on the role of youth social networks (Strategy 6) on promoting resilience. For example, if you improve the resilience of youth who are seen as leaders, do the young people around them become more resilient? It may be possible to create cascades of mental health and wellbeing – for example as when hope spreads from one person to his or her social network. (3).

## Discussion of key findings

This review found clear evidence that large-scale, multi-component SEL interventions can promote wellbeing and resilience among children and young people. It also found that certain factors, such as using the SAFE procedure mentioned above, could improve the effectiveness of SEL interventions. The SEL programs described in the research consisted of a number of intervention strategies, but it was unclear which strategies were most and least effective. The review identified six specific strategies commonly used in these interventions, and found evidence that each of them is likely to be effective.

## Conclusion

Decades of research now indicate that large, multi-component SEL programs can be reliably used to promote resilience and wellbeing among children and young people. However, this research also suggests that what works in one context – for one school – may not work in other contexts and other schools. Early learning centres and schools need to implement programs in a way that is sensitive to their context, and continuously review whether the programs are effective.

The time and resources available to early learning centres and schools are limited. However, the findings suggest there are a number of simple strategies that educators can implement to promote social and emotional learning skills. For example, fostering simple mindfulness practices including focusing on one's breathing and mindful smelling and tasting. Early learning centres and schools would benefit from partnering with research groups such as Beyond Blue and universities and collaborating on research to help develop a better understanding of what specific SEL strategies work best for them.



# Background

Be You defines resilience as “doing well during or after an adverse event, or a period of adversity”. Other researchers define it similarly as “positive adaptation to acute/chronic adversity” (4) and the “capacity of an individual, family, community or environmental system to return to normative functioning after exposure to an atypical stressor” (5). Of critical importance, resilience can be taught (6).

Resilience is often conceptualised on a continuum, with high-resilience implying positive mental health and the absence of psychological problems. Indeed, good mental health may be seen as a proxy for resilience (7). In 2016, a review was published on how resilience was used in scientific literature from 2000-2015 (7). While it found some inconsistencies in the way the term was used, five elements of resilience emerged:

1. Rising above adversity: the capacity to endure and overcome hardship
2. Adaptation and adjustment: continue to grow and adapt despite significant stressors
3. Ordinary magic: resilience is made up of ordinary rather than extraordinary processes
4. Good mental health: positive social and emotional functioning
5. Ability to bounce back: ability to return to typical functioning

The core focus of this review is how resilience-based programs can promote wellbeing. Specifically, we report evidence that programs can promote mental health, flourishing, life satisfaction, depression, anxiety, pro-social behaviour, social support, and social connection.

The Children’s Resilience Research Project (6), which was commissioned by Beyond Blue, found that most resilience interventions target the skills, knowledge and capacities of children. However, it is important to note that the sources of resilience are individual and environmental, and the result of an interaction between the two. The Project also found that strategies that can be used opportunistically by professionals to promote resilience (i.e. everyday strategies), may be as important as structured interventions, given that developing resilience is a dynamic process.

This review does not focus on preschools’ and schools’ academic performances (e.g. grades). However, we acknowledge that many educators feel pressured to increase students’ achievement scores and worry that resilience programs will take away from children and youth’s academic results. This worry turns out to be unfounded; a meta-analysis of 213 American school-based social and emotional learning (SEL) programs suggests that SEL programs add an average 11-percentile gain in academic achievement (8). Similarly, a study conducted with 3485 3 and 4 year olds, found that children’s social competence was positively related to their achievement in mathematics during the preschool year (9). Positive peer relationships and close teacher-child relationships may therefore play an important role in predicting children’s early mathematics skills during the preschool year (9). Those who are interested in understanding the effects of resilience-type programs on preschool and school academic performance are encouraged to read the following references: (8, 10-12).

# Methods

## **Question 1: What is the relationship between social and emotional learning skills and mental health and wellbeing in children and young people?**

Academic literature was reviewed to identify systematic reviews and meta-analyses that examine the relationship between social and emotional learning interventions and mental health and wellbeing in children and young people. Only peer-reviewed studies published between 2014–2019 were included. See Appendix 1 for search terms used and the article selection process. A total of nine systematic reviews/meta-analyses examining the relationship between multi-component SEL interventions and mental health and wellbeing in children and young people were identified for inclusion in the review.

## **Question 2: What strategies have been effective for educators to support children and young people to build social and emotional learning skills?**

A search was performed in PsycINFO on the overall topic of “social and emotional learning” (see Appendix 1 for search terms used). In addition to the SEL search, focused searches were performed in the PsycINFO database for each of the six strategies that are used by multi-component resilience interventions.

Strategy 1: Promote values and need satisfaction

Strategy 2: Promote wise and pragmatic use of language

Strategy 3: Promote mindfulness

Strategy 4: Broaden and build skills and social networks

Strategy 5: Promote perspective-taking

Strategy 6: Apply first five strategies to groups (see Appendix 2 for more detail).

The key criteria for studies to be included in this section of the review were: peer-reviewed journal articles written in English; published in the last five years to the date of the review (21 May 2019); articles from Australia, New Zealand, Canada, the UK, the US. Studies were excluded if they focused on strategies that were clinical interventions or those targeted at mental ill health.

## **Evidence Grading**

The National Health and Medical Research Council (NHMRC) levels of evidence were used for assessing the quality of studies. See Appendix 3 for a summary of the evidence grading. Overall, there was strong evidence for the SEL interventions described in Question 1. There were several systematic reviews and meta-analyses of randomised clinical trials (RCTs) – the gold standard in research – that were conducted with the target population and demonstrated mostly consistent findings. Strategies 3 and 5 had an excellent evidence base, while the evidence base for strategies 1, 2 and 4 was satisfactory to good. Strategies 1, 3 and 5 had good consistency in their findings, whereas there were some inconsistencies in the findings for strategies 2 and 4. All the strategies, with the exception of strategy 4, have good generalisability to the target population, whereas strategy 4 was lacking studies involving children and adolescents. Overall, there was strongest evidence for strategies 3 and 5.

# Findings

This section reports on the findings from nine systematic reviews/meta-analyses that examined the relationship between multi-component SEL interventions and mental health and wellbeing in children and young people. See Appendix 4 for a summary of the study characteristics.

## **Question 1: What is the relationship between social and emotional learning skills and mental health and wellbeing in children and young people?**

Perhaps surprisingly, research that focuses on the direct relationship between social and emotional learning skills (i.e. self-awareness, social awareness, self-management, responsible decision-making and relationship skills) and mental health and wellbeing in children and young people is scarce. There are however, studies that examine the relationship between mental health and resilience, emotion regulation skills and self-esteem, which are all closely related to SEL.

A meta-analysis of 60 studies examined the relationship between resilience as a personality trait, and mental health in children, adolescents and adults (13). The studies were conducted in a range of contexts, including in Africa, Asia, Europe and the United States (US). The meta-analysis found individuals with low levels of resilience were more likely to have experienced depression or anxiety, whereas individuals with high resilience had higher levels of life satisfaction or positive affect. The relationship between low resilience and poor mental health was stronger among adults than in children and adolescents. This may be because children and adolescents are less able than adults to report their resilience qualities.

More specific to the local context, an Australian study examined the relationship between resilience and wellbeing through a survey of 1000 young Victorians.(14). The participants were aged between 16 and 25 years, with 167 in high school and with low to high socio-economic status (14% had a household income of less than \$31,000, while 12% had a household income of greater than \$150,000). The study found a moderate, positive relationship between resilience and personal wellbeing and global life satisfaction, suggesting that a young person high in resilience would also experience high levels of wellbeing.

A large review examined the relationship between emotion regulation skills (the ability to respond to situations with the range of emotions in a way that is socially acceptable) and mental health (15). The studies were again conducted in a range of contexts including countries in Asia, Europe, the US and the UK, and included participants from childhood through to adulthood. The review focused specifically on the emotion regulation skill of cognitive reappraisal, which involves reinterpreting a situation in a more positive or useful way. Use of the cognitive reappraisal skill was positively associated with positive mental health, whereas low use of the cognitive reappraisal skill was associated with negative mental health. This study therefore highlights the positive relationship between emotion regulation skills, which are an aspect of SEL skills, and positive mental health.

A cross-sectional study conducted with 500 higher secondary school students in India (mean age 17 years), examined the relationship between self-esteem and psychological health and quality of life (QoL) (16). The results indicated that self-esteem has the highest positive impact on adolescent psychological health and QoL, even when compared to positive life events. Conversely, a systematic review including 10 studies examined the relationship between low self-esteem and clinical anxiety and depression (or poor mental health) (17). The studies were conducted in the US and parts of Europe (e.g. France and Finland),



and included participants from ages eight to 18. The studies consistently found that low self-esteem was associated with clinical anxiety and depression in children and adolescents, providing further evidence for the importance of high self-esteem for mental wellbeing.

Although research measuring the direct relationship between SEL skills and mental health is underdeveloped, there is a large body of research that demonstrates the positive impact that interventions focusing on SEL have on children and young people's mental health and wellbeing. The findings of the nine systematic reviews/meta-analyses include in the analysis for Question 1 are outlined below.

Boncu et al. (18) conducted a large review to investigate the efficacy of SEL programs on the development of children and adolescents. Thirty-three articles reporting on 37 studies published between 2008 and 2015 were included in the review, focusing on children and adolescents from preschool to the end of high school. The study found that overall, all 37 prevention programs had significant effects. More specifically, the programs resulted in a significant improvement in participants' attitudes towards self and others, pro-social behaviour and SEL skills, and a significant reduction in externalising problems.

Ciocanel et al. (10) conducted a large review on the effectiveness of positive youth development interventions. Studies were included if they addressed at least one of 12 positive youth development goals (bonding; resilience; social, emotional, cognitive, behavioural or moral competence; self-determination; spirituality; positive identity development; belief in the future; recognition for positive behaviour; opportunities for pro-social behaviour; and prosocial norms) across more than one social domain (school, community, family) or more than one goal in a single domain. Studies focused on interventions that were delivered outside of school hours and no limits were placed on when studies were published. A total of 24 RCTs were included in the review, involving youth aged from 10–19 years. The review found that the interventions resulted in significant effects in young people's psychological adjustment, specifically reductions in emotional distress and improvements in self-perceptions.

Curran and Wexler (19) examined the effectiveness of school-based positive youth development interventions for students in grades 6–12 through a systematic literature review of studies published after 2000. Twenty-four articles of varying levels of methodological quality were included in the review, falling under one of three general categories: curriculum-based; leadership development; and student-based mentorship programs. Of the 12 studies that focused on curriculum, significant improvements were seen in the areas of social competence and anti-social behaviours as a result of the interventions. The nine programs relating to youth leadership yielded limited evidence on effectiveness, with some qualitative evidence that the programs enhanced young people's leadership, communication skills and critical communication skills. Of the two studies that focused on youth mentoring, preliminary findings showed positive outcomes.

Dray et al. (20) conducted a systematic review of studies published between 1995 and 2015 that examined the effectiveness of resilience-focused interventions for children and adolescents aged 5–18 years. The review included 99 articles, reporting on 57 different studies. In all trials, the participants had reductions in four of seven mental health problems studied – depressive symptoms, internalising problems, externalising problems, and general psychological distress – when compared with control groups that did not take part in intervention programs. The effectiveness of the programs varied by age group and length of follow-up. For trials in children, interventions were effective for reducing anxiety symptoms and general psychological distress. For those in adolescents, interventions were effective for addressing the issue of internalising problems. When looking at short-term follow-up, interventions were effective for two of the seven outcomes analysed: depressive symptoms, and anxiety symptoms. When considering long-term follow-up, interventions were found to be effective for addressing the issue of internalising problems.

Gutman and Schoon (21) summarised reviews published between 1990 and 2012 that focused on SEL programs for school-aged children and/or adolescents. Six large-scale reviews were identified that were

published between 2008 and 2012. On average, the studies found that the programs had medium to large effects on social skills and small to medium effects on positive attitudes, psychological/emotional adjustment and problem behaviours among participants. The authors said the studies did not shed light on what specific skills are taught in SEL programs and which SEL skills can be taught at what ages.

Taylor et al. (22) conducted a large review to investigate the follow-up effects of school-based SEL interventions for kindergarten to grade 12 students. Eighty-two studies published between 1981 and 2014 were included in the review. It found Small-to-moderate associations between social and emotional assets (SEL skills and attitudes) and positive and negative indicators of wellbeing (e.g. positive social behaviour and less emotional distress). These positive benefits were present from 56 weeks and up to 195 weeks after students received the intervention program. The interventions were found to be equally effective for different demographic groups (racial groups, socioeconomic statuses, and domestic/international student bodies).

Waldron et al. (23) conducted a review of the long-term effects of school-based anxiety prevention trials. Eight RCTs, published between 2005 and 2014, evaluated the impact of universally delivered programs for children and adolescents aged 5–18 years. Five of the eight studies found that the programs had significant effects on anxiety prevention after 12-months, with small to moderate effect sizes. All five studies that reported significant effects were evaluating the FRIENDS program. The FRIENDS program is entirely focused on anxiety prevention and teaches children techniques in relaxation, cognitive restructuring, attentional training, parent-assisted exposure and peer support. The three studies that did not find immediate or longer-term effects were evaluating the Aussie Optimism Program and the E-COUCH program, which is delivered online. The Aussie Optimism Program has a dual focus on anxiety and depression. It targets cognitive and social risk and protective factors for depression and includes social skills training.

Woods and Pooley (24) conducted a review of international prevention programs that were implemented to assist the transition to high school, and specifically for the prevention of adolescent anxiety and depression. Eleven papers were included in the review, with six evaluating the Penn Resilience Program and two looking at the FRIENDS Program mentioned above. The Penn Resilience Program is a depression prevention program based on cognitive behavioural therapy ( ), that teaches skills to reduce negative conditions, promote optimistic attribution styles, and enhance social problem-solving and coping skills. Noteworthy findings relating to the Penn Resilience Program included those from a trial with 69 grade 5 and 6 students, which found the program was effective in preventing depression when students were followed up six-months and two-years after taking part. (25). A more recent study involving 408 grade 6–8 students (26) examined the effectiveness of the Penn Resilience program compared to a version that included a parent component and a control condition. Children with average-to-high levels of hopelessness at the start of the intervention showed significant improvements in their levels of anxiety, depression, hopelessness, and coping strategies, relative to the control group that didn't take part in the program, thus supporting a targeted approach. The program with the parental component was not found to be more effective than the original program.

The FRIENDS program was also found to be effective when delivered as a universal intervention for all students. The study with 594 grade 5–7 students demonstrated significantly lower rates of anxiety and depression as a result of the intervention, which were maintained at 12-months follow up (27). The program was found to be more effective for children with low-to-moderate levels of anxiety, providing support for a universal intervention. Lock and Barrett (28) also found that the program was effective in reducing anxiety at the 12-month follow up mark among the grade 6, but not grade 9 students. Lowered levels of depression among the Grade 6 students were evident at the three-year follow-up, suggesting that the benefits from the intervention were later realised. Another noteworthy program from the review (24) was the Aussie

Optimism Program, which was delivered with 47 grade 7 girls. Fewer depressive symptoms and more positive self-worth were evident in the intervention group at six-month follow up.

Yang et al. (12) conducted a review of early childhood curriculum for low-income children aged three to five years. Twenty-nine intervention studies from 14 reports published between 1980 and 2018 were included in the review. Fifteen of the interventions were classified as SEL-focused curricula, while 14 were classified as non-SEL-focused curricula. The study found that only the SEL-focused curricula had significant effects for positive social-emotional outcomes, such as emotional understanding, positive coping behaviour and positive feelings, as well as impacting on negative social-emotional outcomes, for example by reducing children's negative coping behaviours and social problems.

The reviews included studies conducted across a range of contexts, with a large proportion conducted in the US. Four of the nine reviews analysed for this report included studies conducted in Australia, while four did not explicitly state the countries included outside of the US. The majority of reviews focused on studies involving the school-age population, with far fewer focused on the early childhood age group (from birth to age five). The majority did not state the socio-economic status of the participants included in the studies. However Gutman et al. (21) highlighted that the vast majority of available evidence stems from studies in high-income countries. For more detail on the study demographics see Appendix 4: Summary of findings for Question 1.

Overall, these nine reviews provided strong evidence for the effectiveness of SEL interventions in improving mental health and wellbeing in children and young people. The studies are of high rigour and methodological quality, with many summarising studies that are considered the 'gold standard' in research, i.e. RCTs.

The four most common terms associated with these resilience intervention programs (as defined in the research evidence), along with the components that they typically target, are listed below in Table 1. As seen in Table 1, researchers use a number of different names to describe social and emotional learning skills, which can make it challenging to focus on a specific SEL skill. A number of improvements in mental health and wellbeing were demonstrated through the studies, such as improved self-perceptions, social competence, coping strategies and pro-social behaviour, and lowered levels of depression and anxiety. Importantly, the studies demonstrated the effectiveness of SEL interventions for the target population, with the study participants ranging from early childhood to late adolescence.



**Table 1: Evidence-based, multi-component resilience programs, or SEL interventions**

<b>Intervention name</b>	<b>Typical components targeted</b>
<b>Resilience programs (29)</b>	<p>Cognitive skills: recognising and evaluating inaccurate, unhelpful, or negative thoughts and countering those with alternative interpretations that are more positive and helpful.</p> <p>Behavioural and social skills: assertiveness, negotiation, decision-making, problem-solving, and relaxation.</p>
<b>Social and emotional learning (SEL) programs (18)</b>	<p>Self-awareness: Identifying emotions, self-perception, understanding strengths, self-confidence, self-efficacy.</p> <p>Responsible decision-making: Identifying problems, analysing situations, solving problems, self-evaluation, self-reflection, ethical responsibility.</p> <p>Relationship skills: Communication, social engagement, relationship building, teamwork.</p> <p>Social awareness: Perspective-taking, empathy, appreciating diversity, respect for others.</p> <p>Self-management: Impulse control, stress management, self-discipline, self-motivation, goal-setting, organisational skills.</p>
<b>Positive youth development interventions (19)</b>	<p>Bonding, resilience, social, emotional, cognitive, behavioural or moral competence, self-determination (autonomous motivation to act), spirituality.</p> <p>Self-efficacy, positive identity development, belief in the future.</p> <p>Recognition for positive behaviour, opportunities for pro-social behaviour and norms.</p>
<b>Positive psychology interventions (30)</b>	<p>Increasing positive feelings, positive behaviours or positive cognitions.</p> <p>Interventions vary substantially, but can focus on such things as gratitude, mindfulness, strength spotting, goal setting, serenity, values, hope, positive emotions, engagement, relationships, meaning and accomplishment.</p>

## Question 2: What strategies have been effective for educators to support children and young people to build social and emotional learning skills?

This question was broken into two components. The first focused on evidence showing how best to implement multi-component SEL interventions as a whole. The second broke down those multi-component interventions into six sub-strategies and discussed how each of these could be best implemented, based on current evidence.

### Six recommendations for implementing multi-component SEL interventions

#### 1. Consider the age of participants

Boncu et al.'s (18) review focused on school-based SEL programs and found that the most significant effects were in the 7-12 years age group, suggesting that social and emotional learning skills can more effectively be enhanced, and programs can have the largest impact on outcomes, in that age group.

Yeager, Dahl, and Dweck's (31) theoretical paper suggested that interventions aiming to influence the behaviour of middle adolescents (ages 13-17) are often ineffective because they do not sufficiently honour this age group's greater sensitivity to status and respect. They provided three strategies for capturing adolescents' attention and motivation.

- a) A values-harnessing approach that utilises the adolescent desire for status and respect. For example, (32) research by Bryan et al. (32) demonstrated that inviting adolescents to discover the meaning of messages for themselves (rather than telling them what to do and what not to do) honoured their expectation to not be treated like children. Content included an exposé of junk food industry practices (the topic of focus) and then a self-persuasion task where participants explained how they would rebel against food companies. Students in the values-harnessing treatment were less likely to choose high sugar food following the intervention than those in the control conditions.
- b) Changing the environment by making interactions with adults more respectful. Okonofua, Paunesku, and Walton's (33) study found that training teachers to have an empathic approach to discipline that considered students' 'back stories', rather than a zero-tolerance approach, resulted in fewer student school suspensions compared to students who were in a class with teachers who didn't receive the intervention.
- c) Lessening the influence of threats to status and respect by changing mindsets. This strategy is focused on teaching adolescents that traits and labels are malleable and have the potential for change. Yeager, Trzesniewski, and Dweck's (34) study found that teaching adolescents this incremental theory of personality resulted in less aggressive retaliation compared to adolescents who were taught traditional coping-skills or received no treatment.

#### 2. Consider the population of youth targeted

Ciocanel et al.'s (10) review on the effectiveness of positive youth development programs (for 10-19 year olds) found that interventions delivered to low- or mixed-risk children and adolescents were more likely to produce a significant positive effect in relation to pro-social behaviour than interventions with high-risk young people, suggesting that more work is needed to determine the best approach for this cohort. Youth are considered at risk if they are engaged in substance misuse, risky sexual behaviour, school disengagement, and/or violence.

#### 3. Utilise the SAFE procedure (sequenced, active, focused, and explicit).

Gutman and Schoon's (21) review identified four recommended practices for enhancing the effectiveness of SEL interventions. The SAFE practices are: 1) using a step-by-step training approach; 2) adopting active

forms of learning where students engage with the content (e.g. through role playing and problem solving in groups) rather than passively take in information; 3) focusing sufficient time on the child developing the skill; and 4) having explicit learning goals. In two of the meta-analyses cited in the review, interventions that used the SAFE practices were more effective than programs that did not.

#### 4. Provide adequate training and support for program implementers.

Wigelsworth et al.'s (11) review examined factors that moderate the effectiveness of school-based SEL programs for 4–18-year-olds. Across 89 studies of universal programs published between 1995 and 2013, greater effects were likely to be seen when additional support, training, staff or resources were provided. This is something for educators to be mindful of when scaling-up programs, ensuring that adequate support and resources are available.

#### 5. Consider the culture of the participants.

The meta-analysis by Wigelsworth et al. (11) mentioned earlier also found that successful SEL programs could be rendered less effective or ineffective when transported to other countries. This could be due to factors such as infrastructure or could also be due to misalignment with the cultural values of the community.

#### 6. Taking a strengths-based approach.

Such an approach focuses on building value, vitality, and strength, rather than reducing symptoms of poor mental health. Brownlee et al.'s (35) systematic review of research which focused on strength- and resilience-based outcomes in children and adolescents, included 11 studies published between 2000 and 2010. Of these, three were of high methodological standard and provided initial support for the ability of a strengths-based or resilience-based intervention to help in the treatment and assessment of youth in different populations. The review found that clinicians' and educators' commitment to the strength-based orientation influenced the effectiveness of the intervention. Strengths refer to the specific competencies and characteristics of the individual that are important for their overall development and wellbeing. The programs do not necessarily have to increase the number of strengths shown by youths but may also attempt to support youths in utilising their existing strengths to address their current issues. A strengths-based approach is relevant to all youth, as it promotes optimal functioning irrespective of initial dysfunction or adversity.

## Recommendations for implementing the sub-strategies within multi-component SEL interventions

Six SEL strategies are focused on in this review [111]. See Table 2 for a summary of the six strategies, which are explored in more detail below. Case study examples of each can be found in Table 3. See Appendix 5 for a summary of the systematic reviews, meta-analyses and individual studies that informed these strategies.

**Table 2. Summary of the six SEL strategies**

Strategy	Definition	Teachable skills
<b>1: Support student values/needs</b>	Help children and young people to recognise what they value and need (short- and long-term); help them to engage in behaviours that support their	<ul style="list-style-type: none"> <li>Recognising values and needs e.g. connecting with others, being active and caring for oneself.</li> </ul>



Strategy	Definition	Teachable skills
	needs in relation to autonomy, competence, and connectedness.	<ul style="list-style-type: none"> <li>Identifying short- and long-term goals e.g. what is important now? What is important for my future?</li> </ul>
<b>2: Help young people use language wisely and pragmatically</b>	Help children and young people make use of the upsides of language (e.g. effective problem-solving), while minimising some of the downsides of language (e.g. excessive worry, rumination, self-judgment). This strategy includes interventions that build hope and self-esteem, as well as those that teach problem-solving and willingness to act even in the presence of discouraging thoughts or feelings (decoupling).	<ul style="list-style-type: none"> <li>Seeking help when needed.</li> <li>Managing emotions (e.g. deep breathing).</li> <li>Identifying problems, analysing situations and problem-solving.</li> <li>Being willing to act even in the presence of discouraging thoughts or feelings (decoupling).</li> </ul>
<b>3: Help young people to become more mindful (aware and non-reactive)</b>	Help children and young people to become more mindful (aware, able to identify feelings, non-reactive to feelings and impulses). Mindfulness interventions appear to cut across multiple strategies. For example, mindfulness interventions may improve thinking processes (Strategy 2) and perspective taking and pro-social behaviour (Strategy 5).	<ul style="list-style-type: none"> <li>Identifying emotions.</li> <li>Being mindful (e.g. aware, able to identify feelings, non-reactive to feelings and impulses).</li> </ul>
<b>4: Help young people broaden and build their skills and social networks</b>	Help children and young people to broaden and build their skills and social networks. Simple exercises involving expressive writing and art can help youth see their difficult experiences and hardships in new ways. Safe, nurturing environments may encourage youth to take on more challenges and broaden their social networks.	<ul style="list-style-type: none"> <li>Adapting and changing strategies depending on what the situation demands.</li> <li>Taking on new challenges.</li> <li>Accepting (rather than avoiding) negative experiences (e.g. through an expressive writing task).</li> </ul>
<b>5: Teach young people perspective taking skills</b>	Help children and young people to take perspective, viewing themselves and others from a wise and often kind perspective. Even very young children can learn to see their difficult situation from a 'wise' distance and become less reactive to that situation.	<ul style="list-style-type: none"> <li>Taking perspective on themselves through self-distancing (i.e. taking an outsider's view of one's own situation).</li> <li>Developing a growth mindset, i.e. understanding that abilities and intelligence can be developed.</li> <li>Taking perspective on others through relationship building and developing empathy.</li> </ul>
<b>6: Apply the first five strategies to</b>	Children and young people are nested within influential groups, such as families, peers, classrooms,	<ul style="list-style-type: none"> <li>Clarifying group values (e.g. in a sports team).</li> </ul>

Strategy	Definition	Teachable skills
<b>groups, as well as the individual within those groups</b>	communities. Clarify what the group values (strategy 1), form useful group rules (strategy 2), help group members to be aware of how they act, think, and feel in the group (strategy 3), try new group behaviours (strategy 4), and guess how other group members are thinking, feeling, and valuing (strategy 5). This builds the social capital of children and young people as their individual resilience skills.	<ul style="list-style-type: none"> <li>• Being mindful of how other group members are thinking, feeling, and valuing.</li> <li>• Forming useful group rules (using language pragmatically).</li> <li>• Trying new group behaviours (broadening and building).</li> </ul>

## Strategy 1: Support student values/needs

Social and emotional learning programs have the ultimate goal of promoting the values of the individuals and groups involved in the program. At the individual level (see Strategy 6 for group level), values are what give the young person a sense of meaning, purpose, and energy, and help the young person to grow. Values might include connecting with others, giving, being active, challenging oneself, learning, and caring for oneself. Values are like a compass: They help a young person make choices. Values connect to goals, or concrete actions. Here is an idealised example of value clarification happening with a 10 year old child.

Teacher: What do you want to happen at recess today?

Youth: I want to have fun with my friends (the value).

Teacher: What will help you do that?

Teacher: I guess I should share and not argue so much (the goal).

By clarifying and affirming values, the educator can help young people identify what sort of person they want to be. They learn to think about both the short term (What is important now?) and the long term (what is important for my future?). However, young people may not fully know what they value (36). They will need to explore, discover, and learn to find out (see Strategy 4). They will often won't be able to express values in a verbally sophisticated way. However, values clarification and affirmation can happen using simple language, using questions such as:

- What do you want in this situation?
- How would you like to act in this situation?
- What is important to you?
- What do you want to be doing in the future?
- What do you love doing?
- What do you prefer, X or Y?
- Who do you look up to? Why?

Another way to think about values is the Self-determination Theory (SDT) framework of need satisfaction. SDT posits that people value (or have a basic need for) autonomy, competence, and relatedness. Autonomy is about being self-endorsing of one's behaviour and is low when an individual feels pressured or forced to do something. Autonomy does not imply selfishness. For example, a young person may choose willingly to stand up for another young person who is being bullied, even if this involves the person sacrificing their own safety. Competence means being able to manage and master the challenges of life, whether that be on a sporting field or in a classroom (37). Relatedness means the will to interact, be connected to, and experience caring for others.

The core premise of Strategy 1 is this: Children and young people will experience resilience and wellbeing to the extent that they are able to live according to their values, and satisfy their basic needs of autonomy, competence, and relatedness. There are two major sources of evidence that support the efficacy of Strategy 1.

First, research on value clarification, or what is often called 'self-affirmation', suggests that having people complete writing tasks to affirm what they value can have benefits for wellbeing, self-control, self-efficacy, pro-sociality, and adaptive behavioural engagement (38, 39). Much of the research has been focused on adults, but a considerable amount of research has focused on the use of values affirmation in youth to help young people overcome racial threat. For example, Cohen and colleagues tested a values affirmation

program with African American and European American grade 7 students from lower-middle to middle class families (2). All students were presented with a list of values and half of them (the experimental group) were instructed to choose two or three of their most important values, whereas those in the control group were instructed to choose unimportant values. Results indicated that the stigmatised group (African Americans) earned higher grades in the experimental than control group, suggesting that value affirmation may provide psychological resources that protect against racial stigma. These results have been replicated in Latino Americans (40). For additional published studies replicating these findings, see Bowen, Wegmann (41), Harackiewicz, Canning (42), Miyake, Kost-Smith (43).

Research has demonstrated clear links between SDT interventions and increased need satisfaction, academic performance, and quality of life (44-47). There has also been strong, consistent evidence that increased need satisfaction is associated with higher wellbeing, and increased need thwarting is associated with lower wellbeing (48-52). Need satisfaction occurs to the extent that youth experiences intimacy and genuine connection with others (connectedness), feelings of effectiveness and capability to achieve desired outcomes (competence), and self-determination and full willingness when carrying out an activity (autonomy). In contrast, need thwarting refers to the experience of relational exclusion and loneliness, failures and doubts about one's efficacy, and feelings of being controlled through externally enforced or self imposed pressures [37]

## **Strategy 2: Help children and young people to use language wisely and pragmatically**

Every multi-component intervention aimed at developing resilience reviewed in this report targets some aspect of cognitive processing, such as problem-solving, hope, self-esteem, and optimism. The core premise of these interventions is that negative or dysfunctional cognitive processes interfere with optimal functioning and resilience. This premise is well supported by data. For example, longitudinal research shows that adolescents who lack hope are less likely to develop positive aspects of wellbeing (53), and adolescents with low self-esteem are less likely to develop supportive social networks (54). So many interventions seek to undermine the power of negative beliefs and help youth develop positive beliefs. This strategy focuses on specific strategies for promoting the effective and pragmatic use of language.

- Hope and self-esteem

There is clear evidence that positive self-views are associated with increased life satisfaction and positive affect, and decreased negative and depression (55). Can self-views be modified? There is evidence that interventions targeting adolescents have a small to medium effect on global self-esteem(56) and interventions targeting early childhood through to adolescents (3–18 years) have a medium effect on specific self-concept domains such as academics and physical appearance (57). Van Genugten et al. (56) found that the skills of monitoring and evaluation had the greatest effect on self-esteem for secondary interventions (interventions that target individuals with subclinical problems and aim to prevent serious dysfunction. In contrast, primary interventions aim to promote mental health and prevent emotional and behavioural problems within the general population). These skills are outlined in the case study example in Table 3. Similarly, there is evidence that hope, or belief that one can accomplish goals, can be moderately increased in children and adolescents (58).

While the above meta-analyses show general benefits of self-enhancement interventions, there are cautions. Such interventions can be problematic when they reinforce self-concepts that are conditional on performance or social approval (59, 60). For example, in a study involving youth aged 10–16, Schone et al. (60) showed that when young people's self-worth depended on academic grades, they were more susceptible to becoming depressed. The findings suggest that when helping a person to develop a self-concept, one should avoid teaching them that worth is dependent on a specific outcome. Taking a pragmatic view, and paying attention to how the development of self-concept impacts the young person's behaviour, is recommended.



- Gratitude

Gratitude is a positive response to receiving a benefit, as a way to promote wellbeing and pro-social behaviour in children and adolescents (61). For example, children and adolescents may be asked to write down the top five things they are grateful for (62), or write a letter to people who have been kind to them (62, 63). In adolescents, gratitude has been shown to predict life satisfaction, social integration, and prosocial behaviour (62). While this evidence is encouraging, a recent meta-analysis suggested that gratitude interventions are, as a whole, generally ineffective (64). Thus, further research is needed on gratitude interventions before they can be recommended as an evidence-based intervention.

- Problem-solving and reappraisal

Reappraisal interventions (65) encourage children and adolescents to cognitively change the meaning of a stimulus to reduce its emotional impact. Problem-solving interventions are a core part of CBT and encourage children and adolescents to accurately represent the problem and systematically work towards a solution. A meta-analysis of research shows a clear link between the use of cognitive reappraisal, problem-solving and relatively low levels of anxiety and depression (66). Longitudinal research suggests that having an effective problem orientation (seeing problems as a challenge rather than a threat) is linked to the development of higher levels of positive affect and lower levels of negative affect (67). Intervention research suggests that reappraisal can diminish negative affect in children and adolescents (68). Research also suggests that reappraisal skill may improve with age (69, 70). There is also some evidence that reappraisal is best used in specific situations, e.g. when a negative event or situation is uncontrollable (71).

- Positive-self interventions

There are several other interventions that seek to increase the positivity and/or utility of thinking. The research findings are generally similar to the findings about self-esteem and hope detailed above: interventions can be used to increase the positivity or decrease the negativity of cognitive content. For example, in positive-self interventions, people are asked to discuss both positive and negative possible selves, and to develop strategies for achieving their desired possible selves and avoiding their undesired possible self. In one study among low-income youth, students who participated in a program targeting academic possible selves were shown to have decreases in depression, and reduced school misbehaviour (72).

- Decoupling interventions

The previous interventions described in this section focused on altering the content of thinking (i.e. form or frequency). For example, self-esteem interventions might seek to increase the frequency of positive self-related thought or reduce the frequency of negative self-statements. In contrast, 'function' interventions do not seek to directly alter what people think, but rather target the impact of that thinking on behaviour. Thus, a young person may have the thought: "I'll never pass my exam", but learn to see this thought from a psychological distance and thus 'decouple' the thought from action (e.g. study for and pass their exam). Decoupling interventions – sometimes called 'defusion interventions' – include the following: looking at thoughts, feelings, or urges mindfully, as events that can be observed but not reacted to; and disrupting the literal power of words through repetition, song, and art, so that words are seen more like arbitrary sounds than binding truths (36, 73, 74). Levin et al. (75) reviewed 44 studies (albeit focused mostly on adult samples) and found that decoupling was used across a broad range of problems, including substance abuse, depression, anxiety, avoidance behaviour, and self-harm. Recent research suggests that interventions can increase decoupling in adolescents (76), but further research is needed with young people.

While the content and function interventions are described in separate sections here, it is important to note that content interventions like cognitive reappraisal may lead to more decoupling and vice versa (68).

Similarly, mindfulness interventions can work in tandem with decoupling; these processes are not separate.

### **Strategy 3: Help young people to become more mindful (aware and capable of not reacting to their emotions with impulsivity, clinging, or avoidance)**

Mindfulness encompasses more than simply mindful meditation. Rather, it is the awareness that comes from paying attention to present moment experience with an intentional and non-judgmental manner, for the sake of cultivating self-awareness, wisdom, and self-compassion (77). This section provides a summary of findings from three meta-analyses reporting on the effectiveness of mindfulness-based interventions, and interventions that improve executive function, for children and adolescents. There is some overlap in the interventions reported in each of the meta-analyses.

Zoogman et al. (78) conducted a meta-analysis of 20 studies, published between 2004 and 2011, that focused on the effectiveness of mindfulness meditation with children and youth (aged 6–21 years). Most interventions were conducted in schools, and they varied in intervention type. Three studies used mindfulness-based stress reduction, three used mindfulness-based cognitive therapy for children, five used one component of mindfulness-based stress reduction, and nine used another type of mindfulness intervention. Overall, participants' mindfulness showed significantly greater improvement across the studies when compared with control groups, indicating a small effect. The largest effect was seen in the programs' effectiveness in addressing symptoms of psychopathology. The mindfulness interventions appeared to be effective across a wide range of scenarios (e.g. amount of outside practice, instructor previous experience, session length, treatment frequency, treatment length, intervention type, age, sample size, gender, racial/ethnic minority, publication year). Mindfulness programs were shown to have more significant effects when they were provided in a clinical setting than in a school.

Dunning et al. (79) conducted a meta-analysis of 33 RCTs, published between 2004 and 2017, that focused on the effects of mindfulness-based interventions for children and adolescents (aged 3–17 years). The meta-analysis found that the mindfulness interventions resulted in significant reductions in depression, anxiety/stress, and negative behaviours (e.g. aggression, hostility, etc.). Effect sizes were small. No significant differences were found based on the age of the participants.

One of the studies reported in Dunning et al.'s (79) paper was a RCT conducted with 99 upper-primary school children in Canada (80). The regular classroom teachers implemented the program. Children who took part in the mindfulness program showed significant improvements in measures including empathy, perspective taking, emotional control, and mindfulness, and significantly decreased depressive symptoms. They were also more likely to improve on almost every dimension of peer-nominated pro-social behaviour: sharing, trustworthiness, helpfulness and taking others' views. Effect sizes ranged from small-moderate to large.

Another study reported in Dunning et al.'s (79) paper was a RCT conducted with 68 preschool children in the US (81). Children in the intervention group received the 12-week Kindness Curriculum, which was taught by experienced mindfulness instructors. The program was underpinned by mindfulness practice and aimed to enhance children's attention and emotion regulation, as well as emphasising kindness practices (e.g. empathy, gratitude and sharing). The program incorporated children's literature, music and movement to teach the concepts of kindness and compassion. Children who took part in the program showed larger gains in social competence, prosocial behaviour and emotion regulation (as reported by teachers) than those in the control group. The control group also acted more selfishly over time compared to the intervention group. Comparison of the two groups' records at the end of the year showed that the group of children involved in the program had higher marks for social-emotional development than the control group.

Takacs and Kassai (82) conducted a meta-analysis on the efficacy of different behavioural interventions for children's executive functions. Executive function plays a major role in both cognitive and emotional aspects of self-regulation. Ninety studies that focused on children aged between 2 and 12 years were included in the review. Interventions that enhanced children's executive function skills, either through explicit training (e.g. a working memory computer training where students complete a memory task such as remembering numbers in backwards order on a computer program) or implicit fostering (e.g. physical activity), were included in the review. There was a small but significant overall effect of behavioural interventions on children's executive function tests. There were no significant differences based on the age of participants or number of intervention sessions. Of particular interest to this report are the six studies focused on mindfulness practices, which moderate to significant effects. Two studies tested the Kindness Curriculum, one used the Master Mind program, one made an adaptation of the Mindful Schools Curriculum, one used a training that was based on the mindfulness-based stress reduction approach, and one used a researcher-constructed protocol of mindful awareness practices.

These reviews and studies provide an excellent evidence base for the effectiveness of mindfulness and executive function-based interventions for children and adolescents. See Table 3 for examples of concrete mindfulness strategies that can be implemented with children.

#### **Strategy 4: 'Broaden and build'. Help young people to learn how to broaden and build their behavioural strategies, so that they can learn to adapt to changing circumstances and adversities.**

Childhood and adolescence is a time of constant change, new demands, and new adversities. For example, a good way of managing a bully in grade 1 may be for a young person to put her hand out in front of her and say firmly: "Stop, I don't like it". This method would likely be far less effective in grade 9. In order to be able to respond well to adverse events (i.e. be resilient), young people need to be able to adapt and change their strategies, depending on what a situation demands. Low resilience often involves a failure to develop new strategies, even when old strategies consistently fail to work. For example, some young people may laugh along with bullying behaviour, even when laughing along increases the bullying. Others may persist in remaining in a social group, even when that group has become toxic. Often young people (and adults) prefer to do what is familiar and safe over what is uncertain.

The core idea in the 'broaden and build' group of interventions is that for young people to be able to adapt to changing circumstances, they have to be willing to try new behavioural responses. They need to be willing to make mistakes as a necessary part of growth, and they also learn that it is necessary to try new things out, take on challenges, and meet new people, even at the risk of failure and rejection. If they are not able to broaden and build, they can get stuck in familiar, unhelpful behavioural patterns (83). Several lines of research indicate the importance of expanding young people's behavioural repertoires and helping them to experience 'upward spirals' of development (83).

Research suggests that wellbeing and a safe, nurturing environment drive the 'broaden and build process' (84, 85). Specifically, Fredrickson's 'Broaden and Build Theory' suggests that positive outlook and wellbeing broadens awareness, drives approach and exploratory behaviour, and expands social networks (84, 85). Positive emotions signal that it is safe to explore and socialise with new people. Research in youth has generally supported the Broaden and Build model. Williams et al. (86) found that young people who experienced positive affect and life satisfaction during high school tended to expand the number of valued activities they did after finishing school. Happy youth tended to develop increasing positive educational experiences at school (87), and tended to engage more in school (88). It is clear that positive emotional states promote pro-social behaviour in adults, but there appear to be few similar studies in youth to date (89).

While there does not appear to be research that has explicitly evaluated the 'broaden and build' hypothesis in children, it is in essence taught implicitly to all age groups. It is taught every time a child or adolescent is encouraged to try something new, when a current social strategy is not working. For example, a young child may be angry and use aggression as a default strategy in managing other children who are behaving selfishly in a game (e.g. not sharing the ball). This results in the child getting in trouble and not being allowed to play the game. If the child continues to express aggression, it is likely that he or she will experience poor wellbeing and ill-mental health (90). A teacher may encourage the child to experiment with new strategies, for example, by trying to talk with the other child, telling a teacher, or discussing it with other peers during the game. The child would therefore experiment with new behaviours and, in all likelihood, discover new more workable strategies that don't lead to social isolation and ill-mental health.

Negative affect is often characterised by Broaden and Build theorists as causing a narrowing of thought-action repertoire (91). This means that when we are in a negative state, we tend to focus only on what we think is the threat, and nothing else (e.g. fear leads you to focus on the snake and only the snake). This narrowing can be problematic, as young people who are in this state are likely to miss opportunities to improve their lives.

Because of its simplicity, expressive writing is perhaps one of the most researched and supported interventions in this review that aims to counter the tendency to avoid new experiences (experiential avoidance) – a tendency that is strongly linked to poor wellbeing (66) (92). Expressive writing interventions typically ask a child or young person to write about and reflect on negative experiences for about 15 to 20 minutes a day for several sessions. The writing task asks children or youth to focus on their deepest thoughts and feelings. Expressive writing is hypothesised to focus people's attention on memories that have been avoided and undervalued, to elicit processes that are similar to exposure, and to help the child or young person to better understand past negative events (93). A meta-analysis involving youth (94) suggested that expressive writing had the biggest effects on somatic complaints (e.g. unexplained symptoms of illness) and small but reliable effects on internalising problems and social adjustment. A case study example of expressive writing is provided in Table 3, based on one of the studies included in the systematic review. The study (Horn et al. 2010) was conducted in a school setting with adolescents. Expressive writing can be seen as helping children and young people expand the way they respond to distressing experiences, in contrast to narrow, avoidant responses.

- Other 'broaden and build' interventions

Behavioural activation involves using methods (e.g. scheduling) to encourage people to engage in pleasurable or activities they value, even if they feel unmotivated or depressed (75, 95-97). These interventions often encourage people to 'fake it till they make it', that is, engage in valued behaviour before they have the right motivations and feelings. There is evidence for a medium effect in non-clinical participants (i.e. those people not diagnosed with a mental health condition), but most data is on adults (98). Further research is needed in non-clinical youth samples, but evidence in adults is strong (96, 97) and the intervention itself (scheduling of pleasant activities) is unlikely to be harmful.

Art activities are another possible way to help young people broaden their way of responding to difficult emotional experiences by broadening their emotional experiences and ways of viewing the world. One review suggests that in-school art programs can build self-esteem, sense of belonging and relationship building skills (99). The activities involved in the interventions were diverse, including dance, drama, storytelling, filmmaking, and drum circles.

## **Strategy 5: Teach young people perspective-taking skills**

Strategy 5 is organised under two overarching headings: perspective-taking directed at self; and perspective-taking directed at others.



- Perspective-taking directed at self

Three areas are focused on here: psychological distancing interventions, growth mindset, and self-compassion. While the first two areas are well established in the research, self-compassion is an emerging area that shows promise, but for which there needs to be more research focused on children and adolescents.

#### *Psychological distancing interventions*

These interventions encourage young people to view themselves from a distanced, 'outsider' perspective. An experimental study (100) investigated what impact an exercise in 'distancing' had on adolescents' emotional state. Eighty-three 12-22 year-olds viewed scenarios within four situations: neutral – the participants read and rated their natural reactions to neutral scenarios; negative – participants read and rated natural reactions to negative scenarios; distant future – the participants were instructed to use distancing; and near future – the participants were instructed to use distancing, but only to consider the near future. For the near- and distant- situations, the adolescents had to project themselves into the future to consider how each scenario would likely affect them at the chosen future time point, and how they currently felt after projecting themselves. The distancing exercise was found to be effective at regulating emotions, with participants who projected further ahead showing the greatest distress reductions.

Increasing perseverance is important to mental health and social and emotional wellbeing as it can moderate stress (an indicator of poor mental wellbeing) (101). A laboratory experiment with 180 4- and 6-year old children (102) examined the impact of self-distancing (i.e. taking an outsider's view of one's own situation) on young children's perseverance. Children were asked to be a 'good helper' by completing a boring activity and were assigned to one of three scenarios: in the self-immersed condition, children reflected on the task from a first-person point of view; in the third-person condition, children were encouraged to reflect on the task while referring to themselves by name (moderately distanced); and in the exemplar condition children were encouraged to reflect on the task as if they were a specific character (e.g. Batman). The study found that children in the exemplar condition worked significantly longer than children in the self-immersed condition, demonstrating that taking an outsider's perspective on one's own behaviour can improve perseverance.

#### *Growth mindset*

Growth mindset is the understanding that abilities and intelligence can be developed. When a child encounters a challenging task, rather than saying: 'I will never be able to do this because I'm not smart enough' (fixed mindset), a child with a positive growth mindset would say: 'If I continue to work hard I will be able to improve in this area'. It is well established in the research that a growth mindset can lead to school achievement (see meta-analysis by Sarrasin et al. (59) as an example). However, more recent research has demonstrated the link between growth mindset and psychological wellbeing. A survey of 1260 Chinese students from five diverse primary and middle schools found that high levels of growth mindsets in students predicted higher psychological wellbeing and school engagement as a result of enhanced resilience (83).

Miu and Yeager (103) evaluated the impact of a brief growth mindset intervention with 599 US students entering high school (aged 14–15 years). The students were from three high schools of differing socio-economic status. The reading and writing intervention, which was implemented by research assistants, taught the belief that people's socially relevant characteristics have potential to change. When the students who took part were followed up nine months later, the study found that the intervention had reduced the incidence of clinically significant levels of self-reported depressive symptoms by nearly 40%, compared with a control group. The intervention is described in greater detail in the table 3.

Schleider and Weisz (104) evaluated the impact of a single-session growth mindset program for adolescent anxiety and depression through a randomised controlled trial. The study involved 96 adolescents (aged 12–15) who either received the 30-minute, computer-guided intervention, or were in the control group. The program introduced the concept of neuroplasticity and provided testimonials and vignettes from older youths describing their beliefs that people can change and how they used 'growth mindsets' to persevere/cope following challenges. When the groups were followed up after nine months, the findings showed those who took part in the mindset intervention had significantly greater improvements in parent-reported youth depression and anxiety; youth-reported depression; and youth-reported perceived behavioural control, compared with the students in the control group.

#### *Self-compassion (emerging area)*

A meta-analysis (105) of 27 self-compassion interventions with adults found that self-compassion is a skill that can be successfully taught. The interventions also had a positive impact on indicators of wellbeing, including large effects for eating behaviours and rumination. This is an emerging area of research for educators to keep an eye on, given the current lack of interventions assessing the relevance of self-compassion for children and adolescents. Despite this gap in the evidence, self-compassion is a promising intervention area given the longitudinal evidence that adolescents high in self-compassion are less impacted by the negative mental health effects of low self-esteem and experience greater wellbeing on outcomes such as positive affect and life satisfaction (54).

- Perspective-taking directed at others

Two areas are focused on here: relationship skills and pro-social behaviour. Within relationship skills, the skill of empathy is described, and within pro-social behaviour, the topic of prejudice prevention is described.

#### *Relationship skills: Empathy*

Empathy has been shown to be closely associated with good mental health and wellbeing, as it helps children and young people to adapt to, and cope with, stressful situations by recognising their own emotions and understanding the emotional states and intentions of others (106–108). Cheang et al. (109) conducted a systematic review to examine whether mindfulness-based interventions increased empathy and compassion in children and adolescents. Sixteen studies were included in the review, of varying methodological quality. Of the 10 studies that measured mindfulness, results were mixed, and the methodological quality of those studies was considered weak. The 10 studies that measured empathy indicated strong findings that mindfulness-based interventions increased empathy, with more than half of these studies having 'good' or 'moderate' methodological quality. Of the eight studies that measured self-compassion, approximately 62% found it increased following the intervention. Most participants in the studies were adolescents, therefore limiting the generalisability of the findings to younger children.

Teding van Berkhout (110) assessed the efficacy of empathy training through a meta-analysis of 18 RCTs. The meta-analysis found that empathy training programs were effective overall in increasing empathy. However, of these 18 studies, only four examined the efficacy of teaching empathy to children and teens, and these did not show a significant overall effect. Although these studies are of high methodological rigour (RCTs are considered the gold standard in research), it should be noted that three of the four studies included youths with behavioural difficulties, aggression and autism, highlighting their effectiveness with these population groups. This meta-analysis suggests that empathy training is effective with adults, but may not be as effective with a general population of children and adolescents.

#### *Pro-social behaviour*

Pro-social behaviour is defined as voluntary behaviour intended to benefit another (111). A review of 31 studies by Donald et al. (112) examined the association between mindfulness and pro-social behaviour. The review found that individual differences in mindfulness were linked to pro-social behaviour, with a

medium-to-large effect size. That is, individuals who have a general disposition towards being aware of, and attentive to, the present moment are more likely to respond to the needs of others in helpful ways. This is likely due to increases in empathic concern, emotion regulation, and positive affect. The review also found that mindfulness-based interventions predicted greater pro-social behaviour, with a medium sized effect across the studies. Mindfulness interventions that focused on cultivating pro-social emotions did not have a larger effect on helping behaviour than those that focused only on cultivating mindful awareness, suggesting that mindfulness by itself is sufficient to produce increases in helping behaviour. For an example of mindfulness strategies that can be implemented in the classroom, see the MindUp case study presented in Table 3.

Montgomery and Maunders (113), conducted a systematic review of eight trials involving creative bibliotherapy – use of narrative materials such as fiction, poetry, and film – for the prevention and treatment of internalising (mental health issues) and externalising (e.g. aggressiveness and rule breaking) behaviours, and the strengthening of pro-social behaviours in children (aged 5–16). One of the studies was published in 1983, and the remaining seven were published during or after 2000. Among the three studies that measured the impact of creative bibliotherapy on internalising behaviours, a small to moderate effect was found. One of these studies was conducted with children in a residential home who had likely suffered significant trauma, one was conducted with a healthy sample of participants, and one with children identified as having behavioural difficulties. The interventions had a small, beneficial effect on reducing externalising behaviour. Finally, interventions found a small- to moderate-effect for improving for pro-social behaviour. These interventions were conducted with children with no reported maladjustment.

#### Prejudice prevention

Prejudice prevention is integral to social wellbeing as it promotes the development of supportive relationships that are not toxic and reduces interpersonal conflict.

Beelmann and Heinemann (114) assessed the efficacy of training programs seeking to prevent prejudice and improve intergroup attitudes among children and adolescents, such as attitudes towards members of an ethnic group. Eighty-one research reports, covering 122 intervention-control comparisons of structured programs were examined. The programs were found overall to be effective, with a low to moderate effect size. The most effective programs were those where students had direct intergroup contact – that is, had the opportunity to initiate personal relationships and friendships between members of different ethnic groups. Effective programs also tended to rely more on an active trainer, rather than upon children teaching themselves through printed materials and group discussions. Programs were effective across a wide range of demographic factors (age group, gender, in group).

Ulger et al.'s (115) meta-analysis evaluated the effects of in-school interventions on outgroup members (defined as members of different ethnic or religious backgrounds or different age groups, persons with either physical or mental disabilities, or persons with other distinctive features) and found similar results to the review detailed above by Beelman and Heinemann (114). Overall, results from the 50 studies indicated significant and moderate effects, supporting the use of anti-bias programs in schools to change outgroup attitudes. The strategies found to be most effective were intergroup contact interventions, and multi-faceted interventions (consisting of different strategies).

One of the studies reported in the above two reviews was conducted with 87 upper-primary schools children in Dover, Kent, in the UK (116). Regular classroom teachers delivered the anti-racist intervention called The Friendship Project. Children who received the intervention had more positive attitudes towards refugees in the short term than children who did not receive the intervention.

## **Strategy 6: Apply the first strategies to groups, as well as the individual youth within those groups**

While this review is focused on individual resilience, it is important to remember that children and young people are nested within many groups, including early learning services, schools, sports teams, families, and communities. The five strategies can be applied to groups as well as individuals. For example, consider a sports team. A team can be encouraged to: 1) clarify its values (we value supporting each other and playing our best); 2) use language pragmatically ('let's encourage each other on the field'); 3) be more mindful (be aware of where everybody is at on the field); 4) broaden and build ('let's play people in different positions today'); and 5) take perspective both on oneself ('I can improve myself by playing sport'), and others ('I'm being too much of a ball hog. I need to let someone else shine in this moment').

The groups within which youths are nested can have an impact on youth resilience. For example, young people nested within hopeful youth groups (see Strategy 2) tend to experience more hope themselves (117). Teachers who feel support for their autonomy, competence, and relatedness needs (Strategy 1) are more likely to support students' autonomy, competence, and relatedness (118). Parents who emphasise collaboration with their child, explain boundaries, and minimise coercion (e.g. use of guilt or punishment) tend to produce young people who have the best mental health (119). A full discussion of the interventions is beyond the scope of this review, but the interested reader can explore the following:

- interventions to improve parenting behaviour (86, 120-124)
- interventions targeting siblings (125)
- interventions based on mentoring (21)
- teacher wellbeing and need supportive interventions. (118, 126)

**Table 3. SEL strategies and sample interventions**

Strategy	Sample interventions	Citation(s)
<b>1: Support student values/needs</b>	<p>Value affirmation</p> <p>Provide youth with a list of values and have them identify their top two or three. Then have them describe in a few sentences why the selected values were important to them, focusing on thoughts and feelings, and not worrying about spelling or grammar or how well written their essay was. Finally have them look again at their values and list the top two reasons why these values are important to them (42).</p> <p>Practices that support the needs of children and young people:</p> <ul style="list-style-type: none"> <li>• Provide choices (e.g. for kinds of assignments or activities).</li> <li>• Provide opportunities for children and students to work in their own way.</li> <li>• Consider student opinions, interests, and preferences.</li> <li>• Provide rationale about usefulness and importance of course material.</li> <li>• Provide students with opportunities to ask questions.</li> <li>• Explain to students how a seemingly uninteresting activity can align with their longer term needs and values.</li> </ul> <p>Practices that thwart the needs of children and young people:</p> <ul style="list-style-type: none"> <li>• Controlling messages (e.g. 'it is my way or the highway')</li> <li>• Suppressing student opinions</li> <li>• Use of guilt, shame, or other types of psychological coercion.</li> </ul>	<p>Marshik, Ashton, &amp; Algina, 2017; Patail et al. 2018; Ryan &amp; Deci, 2017; Haracjuewicz et al. 2014</p>
<b>2: Help young people use language wisely and pragmatically</b>	<p>Teaching the self-regulation skills of monitoring and evaluating has been shown to increase self-esteem. Skills include:</p> <p>Encourage help seeking behaviour. Reinforce the benefits of seeking help; reassure children and youth that struggle is normal.</p> <p>Reward effort or progress towards behaviour.</p> <p>Support emotion management (slow, deep breathing, teacher responds in calming way, mindfulness, taking a break).</p> <p>Teach social problem solving strategies and anger management.</p> <p>Help youth set goals and a plan.</p> <p>Help youth to see that their thoughts need not cause action and that thoughts are just interpretations and are not necessarily true.</p> <p>Help youth anticipate difficulties and challenges and to plan and cope effectively.</p>	<p>van Genugten et al. 2017; Harrell et al. 2012</p>



<b>3: Help young people to become more mindful (aware and non-reactive)</b>	<p>Key elements of the MindUP program included: (can be accessed here: <a href="https://mindup.org/">https://mindup.org/</a>)</p> <ul style="list-style-type: none"> <li>• Core mindfulness practices (done every day for three minutes, three times a day) of focusing on one's breathing and attentive listening to a single resonant sound.</li> <li>• Lessons that promote emotional regulation and self-regulation (e.g. mindful smelling, mindful tasting), social-emotional understanding (e.g. using literature to promote perspective-taking skills and empathy), and positive mood (e.g. learning optimism, practicing gratitude).</li> <li>• Lessons that involve performing acts of kindness for one another and collectively engaging in community service learning activities.</li> </ul> <p>Overall, the activities aim to change the ecology of the classroom environment to one in which belonging, caring, collaboration, and understanding others is emphasised to create a positive classroom milieu.</p>	<p>Schonert-Reichl et al. 2015</p>
<b>4: Help young people broaden and build their skills and social networks</b>	<p>Key elements of Expressive Writing</p> <p>Definition: Expressive writing involves verbalising inner-emotional states relating to negative experiences. Students can be asked to write about an experience in their life that bothered them and that might have influenced their mood.</p> <p>Purpose: Help youth let go of unhelpful avoidance strategies and accept difficult experiences from the past and broaden their understanding of the past event so that it is integrated into their current understanding.</p> <p>Explain the benefits of expressive writing to students, including:</p> <ul style="list-style-type: none"> <li>• Developing skills in recognising and labelling emotions.</li> <li>• Counterbalancing stress by using expressive writing as a coping strategy.</li> </ul> <p>Considerations:</p> <p>Ensure students have adequate privacy when completing the task. There are indications that expressive writing has stronger effects if it is applied in more private settings. If possible, allow each student to have their own table so that their writing is not visible to their neighbours or the teacher during the writing procedure. Youth need to be reassured that what they write is anonymous (or if not for some reason, this needs to be clear too). The benefits are come from the expressive writing itself.</p> <p>The task can take place over a short amount of time e.g. 15 minutes.</p> <p>Activity scheduling focused on broadening and building:</p> <p>Schedule activities that are novel and encourage the young person to learn how to deal with new people and situations.</p> <p>Ideally, these activities should target young people's need for competence, connection and autonomy.</p>	<p>Horn et al. 2010</p>

	Examples: adventure education, visiting a university and taking a class there, and working with other students to start a business.	
<b>5: Teach young people perspective taking skills</b>	<p>Key elements of Growth mindset:</p> <p>Developing understanding that people's behaviours are controlled by 'thoughts and feelings in their brains', and that such pathways in the brain can be changed (in the intervention this concept was taught through reading a scientific article).</p> <p>Developing understanding that not everybody is stuck on one personality; over time, people can change, through practice and by their brain making new connections. Teach children that when they have a thought or a feeling, the pathways of neurons in their brain send signals to other parts of their brain that lead you to do a behaviour. By changing these pathways, they can change and improve how they behave after challenges and setbacks. Everyone's brain is a 'work in progress!'.</p> <p>Providing anecdotal examples of the growth mindset concept that can applied, for example:</p> <p>"Some people in school began treating their friends, including me, in a way that showed we weren't as close, or we were belittled or not important anymore. We were excluded and ignored. This morning I was walking by and all that person could do was act as if I wasn't there. Seeing them and they just look you in the face without a hint or smile used to make me feel invisible... But I realised that it's probably not about me... Maybe they are acting different because they are going through some drama that's making them act this way. They could be insecure, so they need to make themselves feel better by making me feel bad. People do things because of their thoughts and feelings, not because they have a trait that makes them good or bad. And thoughts and feelings change all the time."</p> <p>Applying understanding by inviting students to write their own narrative.</p>	Miu & Yeager, 2015

# Gaps in the evidence

It is not yet known what specific components and/or strategies of complex SEL interventions drive change, and whether some components are more essential than others. Research is needed to better examine the mechanisms of change in complex SEL interventions. More 'daily diary' type research into young people's lives is needed to provide us with further information about what works for a specific young person, at what time, and in what context (1). Daily diary research involves having children and youth report how they are feeling and what they are doing on a daily or weekly basis. The core idea is to track trends over time, while they are engaged in school-related activities and socialising.

This report reviewed evidence for six SEL strategies, and found support for each of them, but the amount of evidence for specific interventions under each strategy varied. Below we highlight what remains unknown for each strategy.

**Strategy 1 – Values and needs:** Values affirmation has been shown to boost resilience in US. minorities. However, further research is needed to understand whether these interventions have the same benefits for Australian minority populations..

**Strategy 2 – Pragmatic use of language:** Initial evidence suggests that relatively complex strategies such as reappraisal may be more effective with older, more cognitively sophisticated youth, and in situations that are uncontrollable. Further research is needed to understand other contexts where these more complex strategies may be effective. Evidence is also varied for the effectiveness of gratitude interventions. Finally, although decoupling interventions work well with adults, it is unknown whether they work with children and youth.

**Strategy 3 – Mindfulness:** Although it is known that mindfulness interventions work, it remains unclear whether their efficacy is dependent on the form of mindfulness training. For example, it isn't known whether a sitting meditation is more effective than, for example, mindful movement or mindful sport activities, or whether brief, five- to 10-minute interventions work as well as longer interventions.

**Strategy 4 – Broaden and build:** Much of the research in this area has been conducted with adults or has not involved carefully controlled RCTs with youth. Therefore it is not known to what extent interventions that promote positive affect and feelings of safety cause youth to engage in broadening and building of their skills and social networks.

**Strategy 5 – Perspective-taking of self and others:** It is not known whether self-compassion interventions and empathy training work as well with youth as they do with adults. It is also not known whether mindfulness-based interventions are a viable way to indirectly promote empathy and pro-social behaviour. Finally, it is not known whether prejudice interventions validated mostly in the US work as well in Australia.

**Strategy 6 – Apply first six strategies to groups:** More work needs to be done on school social networks (3, 127, 128). For example, it is not known whether improving the wellbeing of a subset of youth leads to improved wellbeing of other youth in the social network, or whether improving teacher need satisfaction can promote youth need satisfaction and academic success. The research reviewed above suggests the answers might be "yes", but carefully controlled RCT's are needed to evaluate this possibility.

In general, these findings suggest that schools would benefit from collaborating with research groups or universities. Such collaborations would allow them to conduct sophisticated research study designs and analyses, and allow them to assess the cost and/or benefits of implementing different SEL components.

# Discussion of findings

## Why teach SEL skills to children and adolescents?

Social and emotional learning (SEL) skills promote good mental health and wellbeing in children and young people. Meta-analyses of the research and cross-sectional studies demonstrate that children and adolescents who have high levels of resilience, emotional regulation skills, and/or self-esteem, experience higher levels of life satisfaction, wellbeing and positive mental health, than those with lower levels of these traits.

There is also strong evidence to show that SEL programs are effective for improving mental health and wellbeing in children and young people. A large body of research, with studies high in rigour and methodological quality, demonstrate that SEL interventions improved self-perceptions, social competence, coping strategies and pro-social behaviour, and lowered levels of depression and anxiety. Collectively, the body of research provides strong evidence for the relationship between SEL skills and good mental health and wellbeing in children and young people.

## What strategies can educators use to promote SEL skills?

There are a number of factors that will determine the success of a SEL program in schools. Perhaps, first and foremost, the SEL program should be implemented using the SAFE procedure (8, 129).

- Sequenced:** Use a series of connected and coordinated activities to foster skill development.
- Active:** Use active and experiential forms of learning.
- Focused:** Focus on developing specific skills.
- Explicit:** Target all the core SEL skills, including self-awareness, self-management, social awareness, relationship skills and responsible decision-making.

Second, schools will need to make sure all SEL materials are developmentally and culturally appropriate. Eight aspects to consider (130) when ensuring the cultural relevance of an program are listed in Table 4 below. For example, if SEL materials were being delivered to an Aboriginal or Torres Strait Islander population, it would be important to consider the extent to which culturally-specific concepts such as connection to country, and cultural methods such as storytelling, are included in the materials.

**Table 4. Ensuring the cultural relevance of programs**

Aspect	Definition
Language	Use of culturally appropriate language

<b>Persons</b>	Consider the ethnic/racial similarities and differences between the person delivering the intervention and the participants
<b>Metaphors</b>	Consider symbols and concepts that are shared with the population
<b>Content</b>	Consider cultural knowledge such as values, costumes and traditions
<b>Concepts</b>	Consider whether the concepts will resonate with the culture and context
<b>Goals</b>	Consider the inclusion of positive cultural values
<b>Methods</b>	Consider whether the teaching methods reflect the cultural context
<b>Context</b>	Consider any changing contexts during the delivery of the intervention

Third, schools need to provide adequate support and training for those implementing the SEL program. They will at the least need access to training manuals and time set aside to plan and implement programs. Ideally, they should have access to SEL specific training if needed. Finally, SEL programs need to be regularly reviewed by schools, even if they are supported by research studies showing evidence for the effectiveness of the interventions. Such evaluation will ensure that the program works, or continues to work, in the specific school and community context.

One challenge faced in making recommendations based on the research into multi-component SEL interventions, is that it is often not clear which components of the intervention have been effective. To address this limitation, the research was reviewed to look at the specific strategies used in evidence-based SEL interventions. This evidence was usually gathered either in the form of a highly specific intervention in a school setting or an analogue study (a highly controlled experimental study in the lab).

## What specific aspects of resilience should be targeted in interventions?

This review sought to evaluate effectiveness of specific resilience-building strategies (131). Based on available evidence, it is recommended that schools implement six SEL strategies. Below the elements of each strategy that have received the strongest support are described.

### Strategy 1: Support student values/needs

The strongest evidence for Strategy 1 interventions involved those that helped youth clarify and affirm values, and helped youth meet their autonomy, competence, and connectedness needs. Value affirmation need not be highly verbal and complex. It can involve something as simple as highlighting what outcomes children and young people prefer (e.g. playing with friends versus playing by themselves). It can involve discussing of hero characters in stories (e.g. why do you like this hero?). It can involve more open-ended discussions that start with questions like: "What is important to you right now?", "what makes a friend?", "what would you do if you were rich?", and "what do you hope for?" The key idea in value affirmation is to help children and adolescents identify what is important to them and then understand what behaviour they might engage in (and not engage in) to do what they find important.

In terms of need satisfaction, the key is to create opportunities for children and young people to make choices (autonomy), achieve success at tasks (competence), and connect in genuine ways with their peers and teachers (connection). See Table 3 for concrete strategies.

### Strategy 2: Help young people to use language wisely and pragmatically

The review found support for interventions that seek to boost hope and self-esteem, in a way that does not make self-worth contingent on outcome. There was also support for teaching problem-solving and reappraisal (reinterpreting situations in a more useful way). Given the evidence that reappraisal may be more effective for some groups (older youth) and in some contexts (uncontrollable situations), it is



recommended that reappraisal be taught in a pragmatic way, encouraging young people to use it to the extent it is useful (i.e. builds value). Being 'pragmatic' means simply that the educator does not assume a reappraisal strategy like 'positive thinking' is a magic bullet that will always work. The educator can try this strategy and then observe if it improves the behaviour of the young person. If not, then the pragmatic thing to do is to try something else. Finally, there is some evidence that people can be taught not to act on negative thoughts and urges (decoupling), although the best way to promote such decoupling in youth is not clear from the evidence.

There are many simple ways that educators can implement Strategy 2. For example, to promote decoupling, the educator can help children and young people notice when they had a discouraging thought (e.g. "I can't do it. I'm too stupid") and yet still succeeded ("I passed the test"). They can reinforce that thoughts don't always "tell the truth" and that the young person doesn't always have to listen to their inner voice when it is being so discouraging. To build hope and self-worth, educators can create opportunities for young people to experience success or mastery. They can help young people identify role models who persist and overcome hardship similar to what the young person might be experiencing. They can be encouraging and believe in the youth's ability to succeed, no matter what the youth has done in the past. Finally, they can discourage equating failure experiences with self-concept. For example, they can emphasise that failure is necessary for success and failure does not indicate that there is something wrong with them.

### **Strategy 3: Help young people to be mindful (aware and non-reactive)**

Mindfulness-based interventions appeared to have some of the strongest evidence of all the strategies. For example, mindfulness interventions are related to unlinking unhelpful thoughts from behaviour, or 'decoupling' (Strategy 2), and empathy and positive behaviour towards others (pro-social behaviour) (Strategy 5). Mindfulness interventions are recommended, but it is suggested that such interventions are carefully designed to meet the needs of the specific school or early learning service context and culture. Not all mindfulness practices will be acceptable to all education contexts. For example, extended sitting meditations may work better in some schools than others. There are many mindfulness practices that can be active, such as mindful walking, mindful eating, mindful conversations, and even mindful physical activity. Also, it is recommended that schools and early learning services provide a clear rationale for the interventions that don't reinforce the idea that children and youth should avoid their negative feelings. That is, mindfulness interventions should not be sold as a way to get rid of negative feelings. Indeed, negative feelings and stress are a normal part of life and are often necessary for young people to leave their comfort zone and learn new things and develop new skills. So it could be speculated that justifying mindfulness practice in terms of helping children and young people "make good decisions for their life" may be somewhat more effective than suggesting mindfulness will help them "control stress entirely" or make all their problems go away.

### **Strategy 4: Help young people broaden and build their skills and social networks**

'Broadening and building' involves engaging in activities that are important and valued by the youth, and that involve learning to engage in new ways to manage difficulties and stressful life events. This strategy involves encouraging children and young people to engage in trial- and-error learning, in a safe way, that helps them build value in their life. They learn, for example, to meet new friends, when their old group of friends is no longer supportive. They learn to try different strategies to manage a bully or overcome a setback in exams. Finally, they learn new ways to respond to past adversity, so that this past adversity does not cripple them but makes them stronger. The review found evidence for the benefits of expressive writing and artistic expression as ways of expanding how young people think about their situation and past issues and ways of promoting resilience. There is also evidence that if children and young people are safe and happy, they will be more likely to take on challenges and expand their social networks.

Being able to expand social networks will help the young person to be able to move between different groups of friends, something that can be especially important if their current friendship group is dysfunctional. Expanding social networks also allows the young person to form alliances for different purposes (e.g. playing games, hanging out, forming a band, protection against bullies, etc). Finally, expanding networks is an essential skill in adulthood, for building work alliances, making connections, and working together with teams to utilise diverse skills.

### **Strategy 5: Teach young people perspective-taking skills.**

- **Perspective-taking of self:** The review found some evidence that children and adolescents can see themselves from a distanced perspective and that such distance promotes resilience. For example, young people can see unhelpful thoughts like: "I am stupid" from a psychological distance, as if it is separate from them and something they might see "out in the world" like an unhelpful sign. Distancing instructions can be quite simple, such as those that involve changing thoughts from the first person ("I felt stupid") to the third person ("Joseph felt stupid"), or simply writing the thought on a piece of paper and looking at it. Thoughts seen from a distance become less powerful and less likely to influence behaviour. Youth seem to also benefit from seeing themselves as changing (growth mindset), rather than fixed, and also seeing themselves through the eyes of a kind person (self-compassion interventions).
- **Perspective taking of others:** There was evidence that empathy and pro-sociality could be improved indirectly through mindfulness-based interventions, and that prejudice could be reduced through prejudice prevention programs that involved direct intergroup contact.

### **Strategy 6: Apply the first strategies to groups, as well as the individual**

Social network research is beginning to indicate that our wellbeing and resilience is directly influenced by the people around us (3). Improving the wellbeing of just one youth may also have the effect of improving the wellbeing of youth at one, two, and even three degrees of separation from that youth. Helping educators to experience need satisfaction and higher wellbeing may result in youth experiencing higher need satisfaction and wellbeing. The review found that research on social networks and wellbeing is still in its infancy. Schools and early learning services are encouraged to work with research groups to help them to identify the best ways to promote resilient groups as well as individuals. Social networks could be easily measured, in questionnaires that need take no more than 20 to 30 minutes. With the right partnership, data on the networks could be entered and analysed by the research group, thus reducing burden on the schools. It is acknowledged this might be difficult, but nevertheless, collaborations between research groups and schools that result in mutually beneficial outcomes are encouraged.

Schools may also seek to form groups using the first five strategies. This should, in theory, produce more cooperative, pro-social groups (though more research needs to be done here). Such groups can be pre-existing, such as sports teams, or formed ad-hoc, such as a group that is formed to clean up the environment, implement random acts of kindness in schools, or raise money for a charity. The critical point here is to utilise the group context to teach the five strategies.

# Conclusion

Decades of research now indicate that large, multi-component SEL programs can be reliably used to promote resilience and wellbeing. However, this research also suggests that what works in one context, for one learning community, may not work equally well in other contexts. It is essential that educators and learning communities implement programs in a way that is sensitive to their context, and continuously review the programs for their effectiveness. That is, while SEL programs have been shown to work in the past, we must continue to check if they will work in the present, in a specific place and time.

School and early learning service time and resources are limited. The reviewers believe it is important for research groups and university staff to work closely with schools to help them develop the most time efficient and inexpensive SEL programs possible. Fortunately, this work is already happening around the world, and should provide evidence about what strategies are most effective within the next five to ten years. Schools and researchers have made an excellent start to the noble goal of improving the lives of children and young people. Future research will help improve the efficiency and effectiveness of SEL interventions.

# References

1. Hayes SC, Hofmann SG, Stanton CE, Carpenter JK, Sanford BT, Curtiss JE, et al. The role of the individual in the coming era of process-based therapy. *Behaviour Research and Therapy*. 2019;117:40-53.
2. Cohen GL, Garcia J, Apfel N, Master A. Reducing the racial achievement gap: a social-psychological intervention. *Science*. 2006 2006/9/1;313(5791):1307-10.
3. Parker PD, Ciarrochi J, Heaven P, Marshall S, Sahdra B, Kiuru N. Hope, Friends, and Subjective Well-Being: A Social Network Approach to Peer Group Contextual Effects. *Child Development*. 2015;86(2):642-50.
4. Theron LC. The everyday ways that school ecologies facilitate resilience: Implications for school psychologists. *Sch Psychol Int*. 2016 2016/4/1;37(2):87-103.
5. Ungar M, Connelly G, Liebenberg L, Theron L. How Schools Enhance the Development of Young People's Resilience. *Soc Indic Res*. 2017 2017/9/11.
6. ARACY and the Parenting Research Centre. Children's Resilience Research Project: Final Report Australia 2017.
7. Aburn G, Gott M, Hoare K. What is resilience? An Integrative Review of the empirical literature. *J Adv Nurs*. 2016 2016/5;72(5):980-1000.
8. Durlak JA, Weissberg RP, Dymnicki AB, Taylor RD, Schellinger KB. The Impact of Enhancing Students' Social and Emotional Learning: A Meta-Analysis of School-Based Universal Interventions. *Child Development*. 2011;82(1):405-32.
9. Mackintosh BB, McCoy DC. Exploring Social Competence as a Mediator of Head Start's Impact on Children's Early Math Skills: Evidence from the Head Start Impact Study. *Early Education and Development*. 2019.
10. Ciocanel O, Power K, Eriksen A, Gillings K. Effectiveness of Positive Youth Development Interventions: A Meta-Analysis of Randomized Controlled Trials. *J Youth Adolesc*. 2017 2017/3;46(3):483-504.
11. Wigelsworth M, Lendrum A, Oldfield J, Scott A, ten Bokkel I, Tate K, et al. The impact of trial stage, developer involvement and international transferability on universal social and emotional learning programme outcomes: a meta-analysis. *Cambridge Journal of Education*. 2016 2016/7/2;46(3):347-76.
12. Yang W, Datu JAD, Lin X, Lau MM, Li H. Can Early Childhood Curriculum Enhance Social-Emotional Competence in Low-Income Children? A Meta-Analysis of the Educational Effects. *Early Educ Dev*. 2019 2019/1/2;30(1):36-59.
13. Hu T, Zhang D, Wang J. A meta-analysis of the trait resilience and mental health. *Pers Individ Dif*. 2015 2015/4/1;76:18-27.
14. Tonym AJ, Weinberg MK. Resilience and Subjective Wellbeing: A Psychometric Evaluation in Young Australian Adults. *Australian Psychologist*. 2018;53(1):68-76.
15. Hu T, Zhang D, Wang J, Mistry R, Ran G, Wang X. Relation between emotion regulation and mental health: A meta-analysis review. *Psychological Reports*. 2014;114(2):341-62.

16. Gurung U, Sampath H, Soohinda G, Dutta S. Self-esteem as a protective factor against adolescent psychopathology in the face of stressful Life events. *Journal of Indian Association for Child and Adolescent Mental Health*. 2019;15(2):34-54.
17. Keane L, Loades M. Review: Low self-esteem and internalizing disorders in young people – a systematic review. *Child and Adolescent Mental Health*. 2017;22(1):4-15.
18. Boncu A, Costea I, Minulescu M. A meta-analytic study investigating the efficiency of socio-emotional learning programs on the development of children and adolescents. *Romanian Journal of Applied Psychology*. 2017 2017/12/31:35-41.
19. Curran T, Wexler L. School-Based Positive Youth Development: A Systematic Review of the Literature. *J Sch Health*. 2017 2017/1;87(1):71-80.
20. Dray J, Bowman J, Campbell E, Freund M, Wolfenden L, Hodder RK, et al. Systematic Review of Universal Resilience-Focused Interventions Targeting Child and Adolescent Mental Health in the School Setting. *J Am Acad Child Adolesc Psychiatry*. 2017 2017/10/1;56(10):813-24.
21. Gutman LM, Schoon I. Preventive Interventions for Children and Adolescents. *Eur Psychol*. 2015 2015/10/1;20(4):231-41.
22. Taylor RD, Oberle E, Durlak JA, Weissberg RP. Promoting Positive Youth Development Through School-Based Social and Emotional Learning Interventions: A Meta-Analysis of Follow-Up Effects. *Child Dev*. 2017 2017/7;88(4):1156-71.
23. Waldron SM, Stallard P, Grist R, Hamilton-Giachritsis C. The 'long-term' effects of universal school-based anxiety prevention trials: A systematic review. *Mental Health & Prevention*. 2018 2018/9/1;11:8-15.
24. Woods R, Pooley J. A review of intervention programs that assist the transition for adolescence into high school and the prevention of mental health problems. *International Journal of Child and Adolescent Health*. 2015;8(2):97-108.
25. Jaycox LH, Reivich KJ, Gillham J, Seligman MEP. Prevention of depressive symptoms in school children. *Behaviour Research and Therapy*. 1994;32(8):801-16.
26. Gillham JE, Reivich KJ, Brunwasser SM, Freres DR, Chajon ND, Megan Kash-MacDonald V, et al. Evaluation of a Group Cognitive-Behavioral Depression Prevention Program for Young Adolescents: A Randomized Effectiveness Trial. *Journal of Clinical Child and Adolescent Psychology*. 2012;41(5):621-39.
27. Lowry-Webster HM, Barrett PM, Lock S. A universal prevention trial of anxiety symptomology during childhood: Results at 1-year follow-up. *Behaviour Change* 2003;20:25-43.
28. Lock S, Barrett PM. A longitudinal study of developmental differences in universal preventive intervention for child anxiety. *Behaviour Change*. 2003;20(4):183-99.
29. Joyce S, Shand F, Tighe J, Laurent SJ, Bryant RA, Harvey SB. Road to resilience: a systematic review and meta-analysis of resilience training programmes and interventions. *BMJ Open*. 2018 2018/6/14;8(6):e017858.
30. Waters L. A review of school-based positive psychology interventions. *The Australian Educational and Developmental Psychologist*. 2011 2011;28:75-90.
31. Yeager DS, Dahl RE, Dweck CS. Why Interventions to Influence Adolescent Behavior Often Fail but Could Succeed. *Perspect Psychol Sci*. 2018 2018/1;13(1):101-22.



32. Bryan CJ, Yeager DS, Hinojosa CP, Chabot AM, Bergen H, Kawamura M, et al., editors. Harnessing adolescent values to reduce unhealthy snacking. National Academy of Sciences of the United States of America 2016.
33. Okonofua JA, Paunesku D, Walton GM. Brief intervention to encourage empathic discipline cuts suspension rates in half among adolescents. *Proceedings of the National Academy of Sciences of the United States of America*. 2016;113(19):5221-6.
34. Yeager DS, Trzesniewski KH, Dweck CS. An Implicit Theory of Personality Intervention Reduces Adolescent Aggression in Response to Victimization and Exclusion. *Child Development*. 2013;84(3):970-88.
35. Brownlee K, Rawana J, Franks J, Harper J, Bajwa J, O'Brien E, et al. A Systematic Review of Strengths and Resilience Outcome Literature Relevant to Children and Adolescents. *Child Adolesc Social Work J*. 2013 2013/10/1;30(5):435-59.
36. Hayes L, Ciarrochi J. *The thriving adolescent: Using Acceptance and Commitment Therapy and Positive Psychology to Help Young People Manage Emotions, Achieve Goals, and Build Positive Relationship*. Oakland, CA: Context Press 2015.
37. Ryan RM, Deci EL. *Self-determination theory : basic psychological needs in motivation, development, and wellness*. New York : The Guilford Press; 2017.
38. Howell AJ. Self-Affirmation Theory and the Science of Well-Being. *J Happiness Stud*. 2017 2017/2/1;18(1):293-311.
39. McQueen A, Klein WMP. Experimental manipulations of self-affirmation: A systematic review. *Self Identity*. 2006 2006/10/1;5(4):289-354.
40. Sherman DK. Self-Affirmation: Understanding the Effects. *Social and Personality Psychology Compass*. 2013;7(11):834.
41. Bowen NK, Wegmann KM, Webber KC. Enhancing a brief writing intervention to combat stereotype threat among middle-school students. *J Educ Psychol*. 2013 2013/5;105(2):427-35.
42. Harackiewicz JM, Canning EA, Tibbetts Y, Giffen CJ, Blair SS, Rouse DI, et al. Closing the Social Class Achievement Gap for First-Generation Students in Undergraduate Biology. *J Educ Psychol*. 2014 2014/5/1;106(2):375-89.
43. Miyake A, Kost-Smith LE, Finkelstein ND, Pollock ST, Cohen GL, Ito TA. Gender achievement gap.pdf. *Science, New Series*. 2010 2010;330(6008):1234-7.
44. Cheon SH, Reeve J. A classroom-based intervention to help teachers decrease students' amotivation. *Contemp Educ Psychol*. 2015 2015/1/1;40:99-111.
45. Hui EKP, Tsang SKM. Self-determination as a psychological and positive youth development construct. *Scientific World Journal*. 2012 2012/4/30;2012:759358.
46. Lazowski RA, Hulleman CS. Motivation Interventions in Education: A Meta-Analytic Review. *Rev Educ Res*. 2016 2016/6/1;86(2):602-40.
47. Patall EA, Steingut RR, Vasquez AC, Trimble SS, Pituch KA, Freeman JL. Daily autonomy supporting or thwarting and students' motivation and engagement in the high school science classroom. *J Educ Psychol*. 2018 2018/2;110(2):269-88.
48. Church AT, Katigbak MS, Locke KD, Zhang H, Shen J, de Jesús Vargas-Flores J, et al. Need Satisfaction and Well-Being: Testing Self-Determination Theory in Eight Cultures. *J Cross Cult Psychol*. 2013 2013/5/1;44(4):507-34.

49. Earl SR, Taylor IM, Meijen C, Passfield L. Young adolescent psychological need profiles: Associations with classroom achievement and well-being: EARL et al. *Psychol Schs*. 2019 2019/2/15;36:595.
50. Haerens L, Aelterman N, Vansteenkiste M, Soenens B, Van Petegem S. Do perceived autonomy-supportive and controlling teaching relate to physical education students' motivational experiences through unique pathways? Distinguishing between the bright and dark side of motivation. *Psychol Sport Exerc*. 2015 2015/3/1;16:26-36.
51. Liu J, Bartholomew K, Chung P-K. Perceptions of Teachers' Interpersonal Styles and Well-Being and Ill-Being in Secondary School Physical Education Students: The Role of Need Satisfaction and Need Frustration. *School Ment Health*. 2017 2017/12/1;9(4):360-71.
52. Yu S, Levesque-Bristol C, Maeda Y. General Need for Autonomy and Subjective Well-Being: A Meta-Analysis of Studies in the US and East Asia. *J Happiness Stud*. 2018 2018/8/1;19(6):1863-82.
53. Ciarrochi J, Parker P, Kashdan TB, Heaven PCL, Barkus E. Hope and emotional well-being: A six-year study to distinguish antecedents, correlates, and consequences. *The Journal of Positive Psychology*. 2015;10(6):1-13.
54. Marshall SL, Parker PD, Ciarrochi J, Heaven PCL. Is Self-Esteem a Cause or Consequence of Social Support? A 4-Year Longitudinal Study. *Child Development*. 2014;85(3):1275-91.
55. Dufner M, Gebauer JE, Sedikides C, Denissen JJA. Self-Enhancement and Psychological Adjustment: A Meta-Analytic Review. *Pers Soc Psychol Rev*. 2019 2019/2;23(1):48-72.
56. van Genugten L, Dusseldorp E, Massey EK, van Empelen P. Effective self-regulation change techniques to promote mental wellbeing among adolescents: a meta-analysis. *Health Psychol Rev*. 2017 2017/3;11(1):53-71.
57. O'Mara AJ, Marsh HW, Craven RG, Debus RL. Do Self-Concept Interventions Make a Difference? A Synergistic Blend of Construct Validation and Meta-Analysis. *Educ Psychol*. 2006 2006/9;41(3):181-206.
58. Weis R, Speridakos EC. A Meta-Analysis of hope enhancement strategies in clinical and community settings. *Psychology of Well-Being: Theory, Research and Practice*. 2011 2011;1(1).
59. Sarrasin JB, Nenciovici L, Foisy L-MB, Allaire-Duquette G, Riopel M, Masson S. Effects of teaching the concept of neuroplasticity to induce a growth mindset on motivation, achievement, and brain activity: A meta-analysis. *Trends in Neuroscience and Education*. 2018 2018/9/1;12:22-31.
60. Schöne C, Tandler SS, Stiensmeier-Pelster J. Contingent self-esteem and vulnerability to depression: academic contingent self-esteem predicts depressive symptoms in students. *Front Psychol*. 2015 2015/10/20;6:1573.
61. Owens RL, Patterson MM. Positive psychological interventions for children: a comparison of gratitude and best possible selves approaches. *J Genet Psychol*. 2013 2013/7;174(4):403-28.
62. Froh JJ, Bono G, Emmons R. Being grateful is beyond good manners: Gratitude and motivation to contribute to society among early adolescents. *Motiv Emot*. 2010 2010/6/1;34(2):144-57.
63. Froh JJ, Kashdan TB, Ozimkowski KM, Miller N. Who benefits the most from a gratitude intervention in children and adolescents? Examining positive affect as a moderator. *The Journal of Positive Psychology*. 2009;4(5):408-22.
64. Renshaw TL, Olinger Steeves RM. What good is gratitude in youth and schools? A systematic review and meta-analysis of correlates and intervention outcomes: gratitude meta-analysis *Psychol Schs*. 2016;53(3):286-305.

65. Bettis AH, Henry L, Prussien KV, Vreeland A, Smith M, Adery LH, et al. Laboratory and Self-Report Methods to Assess Reappraisal and Distraction in Youth. *J Clin Child Adolesc Psychol*. 2018 2018/6/7:1-11.
66. Schäfer JÖ, Naumann E, Holmes EA, Tuschen-Caffier B, Samson AC. Emotion Regulation Strategies in Depressive and Anxiety Symptoms in Youth: A Meta-Analytic Review. *J Youth Adolesc*. 2017 2017/2;46(2):261-76.
67. Ciarrochi J, Leeson P, Heaven PCL. A Longitudinal Study Into the Interplay Between Problem Orientation and Adolescent Well-Being. *Journal of Counseling Psychology*. 2009;56(3):441-9.
68. Nook EC, Vidal Bustamante CM, Cho HY, Somerville LH. Use of linguistic distancing and cognitive reappraisal strategies during emotion regulation in children, adolescents, and young adults. *Emotion*. 2019 2019.
69. Brockman R, Ciarrochi J, Parker P, Kashdan T. Emotion regulation strategies in daily life: mindfulness, cognitive reappraisal and emotion suppression. *Cogn Behav Ther*. 2017 2017/3;46(2):91-113.
70. McRae K, Gross JJ, Weber J, Robertson ER, Sokol-Hessner P, Ray RD, et al. The development of emotion regulation: an fMRI study of cognitive reappraisal in children, adolescents and young adults. *Soc Cogn Affect Neurosci*. 2012 2012/1;7(1):11-22.
71. Haines SJ, Gleeson J, Kuppens P, Hollenstein T, Ciarrochi J, Labuschagne I, et al. The Wisdom to Know the Difference: Strategy-Situation Fit in Emotion Regulation in Daily Life Is Associated With Well-Being. *Psychol Sci*. 2016 2016/12/1;27(12):1651-9.
72. Oyserman D, Bybee D, Terry K. Possible selves and academic outcomes: How and when possible selves impel action. *Journal of Personality and Social Psychology*. 2006;91(1):188-204.
73. Ciarrochi J, Robb H, Godsell C. Letting a little nonverbal air into the room: Insights from acceptance and commitment therapy Part 1: Philosophical and theoretical underpinnings. *J Rat-Emo Cognitive-Behav Ther*. 2005;23(2):79-106.
74. Hayes SC, Strosahl KD, Wilson KG. *Acceptance and Commitment Therapy: The Process and Practice of Mindful Change*. 2nd ed: Guilford Publications; 2016.
75. Levin ME, Luoma JB, Haeger JA. Decoupling as a mechanism of change in mindfulness and acceptance: A literature review. *Behav Modif*. 2015 2015;39(6):870–911.
76. Swain J, Hancock K, Hainsworth C, Bowman J. Mechanisms of change: Exploratory outcomes from a randomised controlled trial of acceptance and commitment therapy for anxious adolescents. *Journal of Contextual Behavioral Science*. 2014 2014.
77. Zhang J, Deng X, Huang L, Zeng H, Wang L, Wen P. Profile of trait mindfulness and its association with emotional regulation for early adolescents. *Personality and Individual Differences*. 2019;147:12-7.
78. Zoogman S, Goldberg SB, Hoyt WT, Miller L. Mindfulness Interventions with Youth: A Meta-Analysis. *Mindfulness*. 2015 2015;6(2):290-302.
79. Dunning DL, Griffiths K, Kuyken W, Crane C, Foulkes L, Parker J, et al. Research Review: The effects of mindfulness-based interventions on cognition and mental health in children and adolescents - a meta-analysis of randomized controlled trials. *J Child Psychol Psychiatry*. 2019 2019/3;60(3):244-58.
80. Schonert-Reichl KA, Oberle E, Lawlor MS, Abbott D, Thomson K, Oberlander TF, et al. Enhancing cognitive and social-emotional development through a simple-to-administer mindfulness-based

- school program for elementary school children: a randomized controlled trial. *Dev Psychol.* 2015 2015/1;51(1):52-66.
81. Flook L, Goldberg SB, Pinger L, Davidson RJ. Promoting prosocial behavior and self-regulatory skills in preschool children through a mindfulness-based Kindness Curriculum. *Dev Psychol.* 2015 2015/1;51(1):44-51.
  82. Takacs ZK, Kassai R. The efficacy of different interventions to foster children's executive function skills: A series of meta-analyses. *Psychol Bull.* 2019 2019/4/29.
  83. Zeng G, Hou H, Peng K. Effect of Growth Mindset on School Engagement and Psychological Well-Being of Chinese Primary and Middle School Students: The Mediating Role of Resilience. *Front Psychol.* 2016 2016/11/29;7:1873.
  84. Fredrickson BL, Joiner T. Reflections on Positive Emotions and Upward Spirals. *Perspect Psychol Sci.* 2018 2018/3;13(2):194-9.
  85. Kok BE, Fredrickson BL. Upward spirals of the heart: Autonomic flexibility, as indexed by vagal tone, reciprocally and prospectively predicts positive emotions and social connectedness. *Biological Psychology* 2011;85(3):432-6.
  86. Williams KE, Ciarrochi J, Heaven PCL. Relationships between valued action and well-being across the transition from high school to early adulthood. *The Journal of Positive Psychology.* 2014;10(2):1-14.
  87. Stiglbauer B, Gnambs T, Gamsjäger M, Batinic B. The upward spiral of adolescents' positive school experiences and happiness: investigating reciprocal effects over time. *J Sch Psychol.* 2013 2013/4;51(2):231-42.
  88. Reschly AL, Huebner ES, Appleton JJ, Antaramian S. Engagement as flourishing: The contribution of positive emotions and coping to adolescents' engagement at school and with learning. *Psychol Schs.* 2008 2008/5;45(5):419-31.
  89. Akinin LB, Van de Vondervoort JW, Hamlin JK. Positive feelings reward and promote prosocial behavior. *Curr Opin Psychol.* 2018 2018/4;20:55-9.
  90. Kassis W, Artz S, White J. Understanding Depression in Adolescents: A Dynamic Psychosocial Web of Risk and Protective Factors. *Child Youth Care Forum.* 2017;46(5):721-43.
  91. Fredrickson BL, Branigan C. Positive emotions broaden the scope of attention and thought-action repertoires. *Cognition and Emotion.* 2005 2005/3/1;19(3):313-32.
  92. Lonfeldt N, Silverman W, Esbjorn B. A Systematic Review and Meta-analysis of the Association Between Third-Wave Cognitive Constructs and Youth Anxiety. *Int J Cogn Ther.* 2017;10(2):115-37
  93. Schubert C, Schmidt U, Rosner R. Posttraumatic growth in populations with posttraumatic stress disorder—A systematic review on growth-related psychological constructs and biological variables. *Clin Psychol Psychother.* 2016;23(6):469-86.
  94. Travagin G, Margola D, Revenson TA. How effective are expressive writing interventions for adolescents? A meta-analytic review. *Clin Psychol Rev.* 2015 2015/3;36:42-55.
  95. Jacobson NS, Martell CR, Dimidjian S. Behavioral activation treatment for depression: Returning to contextual roots. *Clinical Psychology: Science and Practice.* 2001;8:255-70.
  96. Dimidjian S, Hollon SD, Dobson KS, Schmaling KB, Kohlenberg RJ, Addis ME, et al. Randomized Trial of Behavioral Activation, Cognitive Therapy, and Antidepressant Medication in the Acute Treatment of Adults with Major Depression. *Journal of Consulting and Clinical Psychology.* 2006;74(4):658-70.

97. Cuijpers P, van Straten A, Warmerdam L. Behavioral activation treatments of depression: A meta-analysis. *Clinical Psychology Review*. 2007;27(3):318-26.
98. Mazzucchelli TG, Kane RT, Rees CS. Behavioral activation interventions for well-being: A meta-analysis. *J Posit Psychol*. 2010 2010/3;5(2):105-21.
99. Zarobe L, Bungay H. The role of arts activities in developing resilience and mental wellbeing in children and young people a rapid review of the literature. *Perspect Public Health*. 2017 2017/11;137(6):337-47.
100. Ahmed SP, Somerville LH, Sebastian CL. Using temporal distancing to regulate emotion in adolescence: modulation by reactive aggression. *Cogn Emot*. 2018 2018/6;32(4):812-26.
101. Hernández JG, Muñoz-Villena AJ, Gómez-López M. Stress regulation, physical activity, and perseverance in Spanish teenagers with perfectionist trends. *Sustainability (Switzerland)*. 2018;10(5).
102. White RE, Prager EO, Schaefer C, Kross E, Duckworth AL, Carlson SM. The "Batman Effect": Improving Perseverance in Young Children. *Child Dev*. 2017 2017/9;88(5):1563-71.
103. Miu AS, Yeager DS. Preventing Symptoms of Depression by Teaching Adolescents That People Can Change: Effects of a Brief Incremental Theory of Personality Intervention at 9-Month Follow-Up. *Clin Psychol Sci*. 2015 2015/9/1;3(5):726-43.
104. Schleider J, Weisz J. A single-session growth mindset intervention for adolescent anxiety and depression: 9-month outcomes of a randomized trial. *J Child Psychol Psychiatry*. 2018 2018/2;59(2):160-70.
105. Ferrari M, Hunt C, Harrysunker A, Abbott MJ, Beath AP, Einstein DA. Self-Compassion Interventions and Psychosocial Outcomes: a Meta-Analysis of RCTs. *Mindfulness*. 2019.
106. Carnicer JG, Calderón C. Empathy and coping strategies as predictors of well-being in Spanish university students. *Electronic Journal of Research in Educational Psychology*. 2014;12(1):129-46.
107. Aqeel M, Komal R, Akhtar T. Emotional empathy mediates the relationship between personality traits and coping strategies in orphan and non-orphan students. *International Journal of Human Rights in Healthcare*. 2019;12(2):163-76.
108. Kokkinos CM, Voulgaridou I. Relational Aggressors' Coping: The Moderating Role of Empathy. *Journal of School Violence*. 2019.
109. Cheang R, Gillions A, Sparkes E. Do Mindfulness-Based Interventions Increase Empathy and Compassion in Children and Adolescents: A Systematic Review. *J Child Fam Stud*. 2019 2019/4/20.
110. Teding van Berkhout E. The efficacy of empathy training: a meta-analysis of randomized controlled trials. *J Couns Psychol*. 2016 2016;63(1):32-41.
111. Eisenberg N, Fabes RA, Spinrad TL. Prosocial development. In: Eisenberg N, editor. *Handbook of Child Psychology, Social, Emotional and Personality Development*. 3. 6 ed. Hoboken, New Jersey: Wiley; 2007. p. 646-718.
112. Donald JN, Sahdra BK, Van Zanden B, Duineveld JJ, Atkins PWB, Marshall SL, et al. Does your mindfulness benefit others? A systematic review and meta-analysis of the link between mindfulness and prosocial behaviour. *Br J Psychol*. 2019 2019/2;110(1):101-25.
113. Montgomery P, Maunders K. The effectiveness of creative bibliotherapy for internalizing, externalizing, and prosocial behaviors in children: A systematic review. *Child Youth Serv Rev*. 2015 2015/8/1;55:37-47.



114. Beelmann A, Heinemann KS. Preventing prejudice and improving intergroup attitudes: A meta-analysis of child and adolescent training programs. *J Appl Dev Psychol*. 2014;35(1):10-24.
115. Ülger Z, Dette-Hagenmeyer DE, Reichle B, Gaertner SL. Improving outgroup attitudes in schools: A meta-analytic review. *J Sch Psychol*. 2018;67:88-103.
116. Turner RN, Brown R. Improving Children's Attitudes Toward Refugees: An Evaluation of a School-Based Multicultural Curriculum and an Anti-Racist Intervention. *Journal of Applied Psychology*. 2008;38(5):1295-328.
117. Parker AE, Kupersmidt JB, Mathis ET, Scull TM, Sims C. The impact of mindfulness education on elementary school students: Evaluation of the Master Mind Program. *Adv Sch Ment Health Promot*. 2014;7(3):184-204.
118. Marshik T, Ashton PT, Algina J. Teachers' and students' needs for autonomy, competence, and relatedness as predictors of students' achievement. *Soc Psychol Educ*. 2017;20(1):39-67.
119. Duineveld JJ, Parker PD, Ryan RM, Ciarrochi J, Salmela-Aro K. The Link between Perceived Maternal and Paternal Autonomy Support and Adolescent Well-Being across Three Major Educational Transitions. *Developmental Psychology*. 2017;53(10):1978-94.
120. Kumpfer KL, Alvarado R, Tait C, Turner C. Effectiveness of school-based family and children's skills training for substance abuse prevention among 6-8-year-old rural children. *Psychol Addict Behav*. 2002;16(4S):S65-71.
121. Mason WA, January S-AA, Fleming CB, Thompson RW, Parra GR, Haggerty KP, et al. Parent Training to Reduce Problem Behaviors over the Transition to High School: Tests of Indirect Effects through Improved Emotion Regulation Skills. *Child Youth Serv Rev*. 2016;61:176-83.
122. Sanders MR, Kirby JN, Tellegen CL, Day JJ. The Triple P-Positive Parenting Program: a systematic review and meta-analysis of a multi-level system of parenting support. *Clin Psychol Rev*. 2014;34(4):337-57.
123. Sheridan SM, Knoche LL, Edwards CP, Bovaird JA, Kupzyk KA. Parent Engagement and School Readiness: Effects of the Getting Ready Intervention on Preschool Children's Social-Emotional Competencies. *Early Educ Dev*. 2010;21(1):125-56.
124. Yap MBH, Morgan AJ, Cairns K, Jorm AF, Hetrick SE, Merry S. Parents in prevention: A meta-analysis of randomized controlled trials of parenting interventions to prevent internalizing problems in children from birth to age 18. *Clin Psychol Rev*. 2016;50:138-58.
125. Feinberg ME, Solmeyer AR, Hostetler ML, Sakuma K-L, Jones D, McHale SM. Siblings are special: initial test of a new approach for preventing youth behavior problems. *J Adolesc Health*. 2013;53(2):166-73.
126. Mansfield CF, Beltman S, Broadley T, Weatherby-Fell N. Building resilience in teacher education: An evidenced informed framework. *Teaching and Teacher Education*. 2016;54:77-87.
127. Sahdra BK, Ciarrochi J, Parker PD, Craven R, Brockman R, Devine EK, et al. Discrimination as a Frame-of-Reference Effect in Overlapping Friendship Communities of Ethnically Diverse Youth. *Cultural Diversity and Ethnic Minority Psychology*. 2019.
128. Sahdra BK, Ciarrochi J, Parker PD, Marshall S, Heaven P. Empathy and nonattachment independently predict peer nominations of prosocial behavior of adolescents. *Frontiers in psychology*. 2015;6:263-.
129. CASEL. CASEL guide: Effective social and emotional learning programs—Middle and high school edition. Chicago: Collaborative for Academic, Social, and Emotional Learning, 2015.

130. Bernal G, Jiménez-Chafey MI, Domenech Rodríguez MM. Cultural Adaptation of Treatments: A Resource for Considering Culture in Evidence-Based Practice. *Professional Psychology: Research and Practice*. 2009;40(4):361-8.
131. Ciarrochi J, Atkins PWB, Hayes LL, Sahdra BK, Parker P. Contextual Positive Psychology: Policy Recommendations for Implementing Positive Psychology into Schools. *Front Psychol*. 2016 2016/10/10;7(OCT):1561.

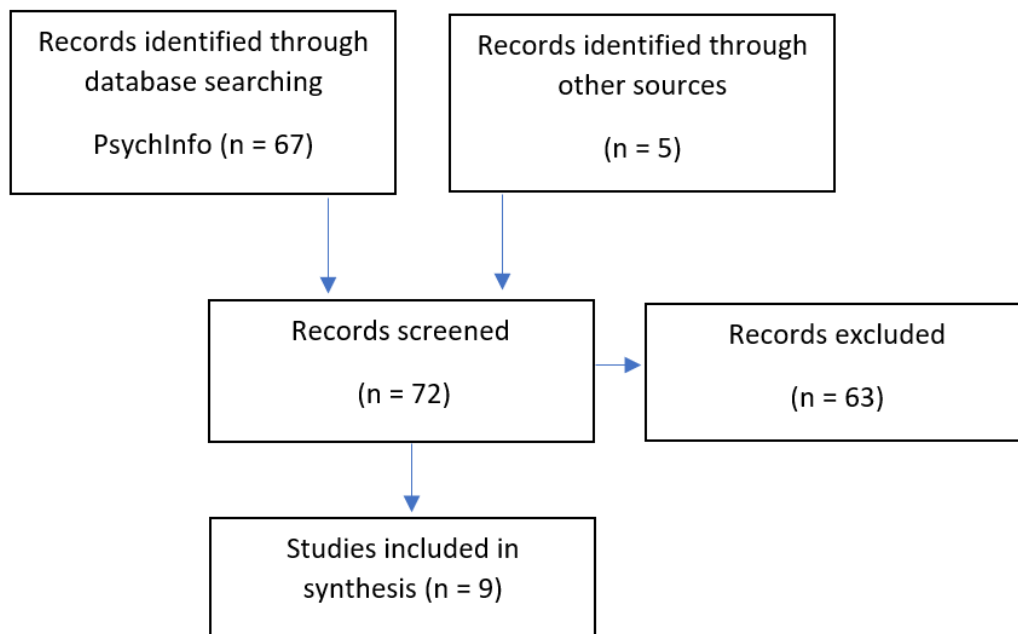
# Appendices

## Appendix 1. Search terms and article selection

### Key search terms for Question 1

Skills	Outcomes	Design
DE "Social Emotional Learning" Social emotional learning MJ social emotional learning Resilience	KW mental health DE "Well Being" DE "Mental Health" mental health wellbeing	meta-analysis metanalysis systematic review
DE = Subjects [exact]; KW = Keywords; MJ = Word in Major Subject Heading		

### Article selection process for Question 1



## SEL search

Population	SEL cues	Content	Design
adolescen* OR teen* OR youth* OR school* OR child* OR "early years" OR "kinder*" OR pre-school OR preschool	"Social and emotional learning" OR "social and emotional development" OR "social emotional learning" OR "SEL" OR Emotional Competence Skills OR Relational skills OR Prosocial Skills OR Emotional Intelligence OR Resilience	Strateg* OR Intervention* OR Program* OR Activit* OR Train* OR guideline* OR "classroom practice" OR "classroom structure"	Interven* OR Control* OR Experiment* OR "systematic review" OR Metanalysis OR "meta- analysis" OR "literature review"
Age group index	DE "Social Emotional Learning" DE: "Emotional intelligence" DE: "Prosocial Behavior"		Methodology index (add any additional terms to the TI/AB search)
DE = Subjects [exact]; TI = Title; AB = Abstract			

## Appendix 2. Strategy searches

Strategy	Searches*
<b>1: Promote values and need satisfaction</b>	<ul style="list-style-type: none"> <li>17 studies were found when combining the Appendix 1 (c) search terms under 'population' with terms relating to self-determination (self-determination OR "self determination" OR "autonomous motivation") and design ("systematic review" OR metanalysis OR "meta-analysis").</li> <li>125 studies were found when combining the 'population' search terms with "self-affirmation".</li> <li>2 studies were found when combining 'population' and 'design' search terms with "self-affirmation"; neither study included in the review</li> <li>Forward citation search on included study (McQueen, 2006); 269 studies found; no relevant systematic reviews</li> </ul>
<b>2: Promote wise and pragmatic use of language</b>	<ul style="list-style-type: none"> <li>"Problem solving" returned too many hits related to cognitive performance (e.g. math problem solving therapy). All related to very specific populations e.g. traumatic brain injury.</li> <li>"Self-esteem" and "intervention" and 'design terms'; 17 hits, 0 relevant; two general meta-analyses identified. Targeted search and consultation with world expert in area (Herb Marsh) led to earlier meta-analyses.</li> <li>"Self-esteem" and "intervention" led to 673 hits (excluded interventions where self-esteem wasn't the main target, or interventions focused on specific clinical population); 5 relevant publications identified.</li> <li>"Gratitude" and 'design' search terms; 10 hits - 4 relevant papers, 3 for gratitude, 1 for positive feelings/broaden and build.</li> <li>9 studies found when combining 'population' and 'design' search terms with "reappraisal"; 1 study included (others excluded due to focus on clinical population).</li> <li>"Psychological distancing" generated 82 hits; combined with 'population' terms resulted in 14 hits; 0 hits when combined with 'design' terms. One study was included; reference list of this article was hand searched resulting in 2 additional articles.</li> <li>"Defusion" OR "decoupling"; 22 found, 4 relevant.</li> </ul>

Strategy	Searches*
<b>3: Promote mindfulness</b>	<ul style="list-style-type: none"> <li>Search was too limited when 'population' terms and 'SEL cues' were combined with 'mindfulness' and design ("systematic review" OR Metanalysis OR "meta-analysis"), n = 7.</li> <li>Population, SEL and design terms were combined, generating 148 articles; 3 meta-analyses were included in the review.</li> </ul>
<b>4: Broaden and build skills and social networks</b>	<ul style="list-style-type: none"> <li>"Broaden and build", combined with 'population' search terms generated 51 hits; 0 hits when combined with 'design' search terms. None of the articles were intervention studies.</li> <li>Forward citation search of seminal broaden-and-build article Fredrickson (2001); limited forward citation search to adolescents and interventions.</li> <li>Expressive writing combined with population terms identified one meta-analysis; targeted search led to a second meta-analysis.</li> </ul>
<b>5: Promote perspective-taking</b>	<ul style="list-style-type: none"> <li>No systematic or meta-analytic studies were found when combining the 'population' and 'SEL cues' with terms relating to growth mindset ("growth mindset*" OR "mindset theory" OR "growth beliefs") and design.</li> <li>Search was broadened to include just the population terms and growth mindset terms; resulted in 82 results, 3 of which were relevant. Articles were excluded due to focusing solely on academic outcomes or not being focused on the relevant age group e.g. focused on parenting interventions.</li> <li>Hand searching of relevant articles' reference lists resulted in one additional study.</li> <li>'Population' and 'design' search terms were combined with 'empathy', resulting in 67 articles when limited to 2014-present. Of these, 3 were included in the review (one of which was included under 'prejudice prevention'). A forward citation search found an additional article relevant for prejudice prevention.</li> </ul>
<b>6: Apply first five strategies to groups</b>	<ul style="list-style-type: none"> <li>"Parenting" AND "intervention" combined with 'design' resulted in 122 peer-reviewed articles published between 2014 and 2019.</li> </ul>
*All searches limited to 2014-2019; peer reviewed; English; and aged under 18 years	



## Appendix 3. Summary of the evidence base using the NHMRC matrix

NHMRC component to summarise the evidence base*	SEL interventions (Question 1)	Strategy				
		1: Promote student values/needs	2: Help young people use language wisely and pragmatically	3: Help young people to become more mindful	4: Help young people to broaden and build their skills and social networks	5: Teach young people perspective taking skills
<b>Evidence base</b>	[A] The evidence base is excellent with several systematic reviews and RCTs demonstrating the positive impact of SEL interventions on mental health and wellbeing.	[C] Several experimental studies relating to values interventions and self-determination theory (SDT) types interventions.	[B] Several RCTs and meta-analyses relating to hope and self-esteem. However, in other areas such as decoupling and psychological distancing interventions, there are mainly level III studies.	[A] Several meta-analyses on RCTs relating to mindfulness-based interventions.	[C] This strategy is large in scope and therefore lacks RCTs synthesising the evidence. There is however a meta-analysis focusing on expressive writing as one example of broadening and building skills.	[A] Several meta-analyses on RCTs relating to facets of this strategy including self-compassion interventions, empathy training, and prosocial behaviour.
<b>Consistency</b>	[B] The reviews were mostly consistent in their findings, with small inconsistencies due to the types of study designs and populations included in the studies.	[B] The studies are mostly consistent in their findings, reporting positive effects of value interventions and SDT on need satisfaction that is a proxy for wellbeing.	[C] Studies falling under this strategy differ in their findings. Although support for interventions relating to hope and self-esteem are positive, gratitude interventions do not appear supported in youth. For problem	[B] Findings are mostly consistent, finding improvement in internalising behaviours; differences due to the differing aims of the	[C] Findings are modest and unclear. Although there is evidence that positive affect broadens awareness and leads to building of personal resources, limited research has been conducted specifically with youth. Findings	[B] Studies differed in their findings depending on domain of focus. Studies focusing on empathy training were not found to be effective for children and adolescents, however there were positive findings related to anti-

			solving and appraisal, results differ depending on age group of focus.	meta-analyses anti-bias programs.	related to expressive writing with youth are strongly supported.	bias programs and pro-social behaviour.
<b>Generalisability</b>	[A] All studies focused on the target population of children and adolescents, from preschool to end of high school. The reviews predominantly focused on studies conducted in school contexts.	[B] A few of the studies have been conducted with youth experiencing disadvantage, but it is reasonable to assume the interventions would also be effective with a universal population.	[B] Several studies have been conducted with children and adolescents.	[A] Several meta-analyses focused on children and adolescents in both school and clinical settings	[C] Limited studies have been conducted with children and adolescents.	[B] Several meta-analyses focused on children and adolescents, except for empathy training.
<b>Applicability</b>	[B] Some reviews included studies conducted in Australia.	[C] None of the studies appear to have been conducted in Australia.	[B] Some studies have been conducted in Australia.	[B] Some studies have been conducted in Australia.	[B] Some studies have been conducted in Australia.	[B] Some studies have been conducted in Australia.
*A = Excellent; B = Good; C = Satisfactory; D = Poor. RCT: randomised controlled trial; SDT: self determination theory						

Source: A guide to the development, implementation and evaluation of clinical practice guidelines, NHMRC. 2009

<https://www.nhmrc.gov.au/sites/default/files/images/a-guide-to-the-development-and-evaluation-of-clinical-practice-guidelines.pdf>

## Appendix 4. Summary of findings for Question 1

Citation	Article type	Year of publication for studies	Countries included	Designs included	Setting	Population age and SES	Content focus	Results
Boncu et al. 2017	Meta-analysis	2008–2015	Not stated in review	Experimental or quasi-experimental studies with at least one control group	School	Preschool - end of high school SES not stated	SEL programs	33 articles reporting on 37 studies; sig. effect overall ( $g = .31$ ); sig. improvement in attitudes towards self and others ( $g = .19$ ); pro-social behaviour ( $g = .20$ ); social and emotional learning skills ( $g = .36$ ), and a sig. reduction in externalising problems ( $g = .37$ )
Ciocanel et al. 2017	Meta-analysis	1992–2014 (75% after 2000)	USA, Croatia, Ireland, UK and NZ	RCTs	Out-of-school programs	10–19 yrs SES not stated	Youth development programs	24 studies; sig. effects in psychological adjustment, specifically reductions in <i>emotional distress</i> ( $g = .14$ ) and improvements in <i>self-perceptions</i> ( $g = .19$ ).
Curran et al. 2017	Systematic review	2000–2014	Not stated in review	All designs included (e.g. qualitative, mixed method, cross-sectional, RCT)	School	Grades 6–12 SES not stated	Positive youth development	24 articles; sig. improvements in <i>social competence</i> and <i>anti-social behaviours</i> for the 12 curriculum-focused studies; limited evidence for youth leadership; preliminary evidence (although not rigorously tested) for youth mentoring programs.
Dray et al. 2017	Systematic review	1995–2015	16 countries; largest number conducted in AU ( $n=18$ ), followed by US ( $n=14$ )	RCTs and CRCTs	School	5–18 yrs SES not stated	Resilience-focused interventions	99 articles reporting on 57 trials; all trials effective relative to control in reducing 4 of 7 mental health problem outcomes: depressive symptoms, internalising problems, externalising problems, and general psychological distress.

Gutman & Schoon (2015)	Meta-analysis	2008–2012	Stated studies conducted within and outside US & Europe	Meta-analyses	Both within and outside school	School age children/ adolescents SES not stated	SEL programs	6 studies (focused on SEL programs); medium-large effects on social skills and small to medium effects on positive attitudes, psychological/emotional adjustment and problem behaviours.
Taylor et al. 2017	Meta-analysis	1981-2014	44 within US, 38 outside US	Majority RCTs	School	K- grade 12 Low SES (17.1%); middle-upper class (11.0%); no predominant SES (34.1%); SES not reported (37.8%)	SEL programs	82 interventions; sig. effects for social and emotional assets (SEL skills and attitudes) and positive and negative indicators of wellbeing (e.g. positive social behaviour and less emotional distress), ranged from .13 to .33.
Waldron et al. 2018	Systematic review	2005–2014	AU, Germany, UK	RCTs	School	Aged 5–18 yrs SES not stated	Universal school-based anxiety prevention programs	8 studies; 5 (all evaluating the FRIENDS Program) reported sig. prevention effects at the 12-month follow-up, with effect sizes ranging from .2-.69 (Hedges g).
Woods & Pooley 2015	Systematic review	1993–2013	AU, USA, Germany, The Netherlands	RCTs, quasi-experimental	Within school and outside of school	Children and adolescents Varying SES	Prevention of anxiety & depression in transition to high school	11 studies; 6 evaluated the Penn Resilience Program and 2 the FRIENDS Program.

Yang et al. 2019	Meta-analysis	1980–2018	27 in the US, 1 in AU 1 in Germany	(quasi-)RCTs or (quasi-) experimental designs	Formal pre-K contexts	Aged 3–5 yrs Low SES	SEL-focused and non-SEL-focused curricula	14 articles reporting on 29 interventions. SEL focused curricula; sig. effects for positive social-emotional outcomes ( $d = .2$ ), such as emotional understanding, positive coping behaviour and positive feelings, and negative social-emotional outcomes ( $d = -.2$ ), such as reducing negative coping behaviour and social problems.
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Hedges'  $g$  and Cohen's  $d$  both measures of effect size and are extremely similar. Hedges'  $G$  is generally used when sample sizes are  $<20$ , when hedge's  $g$  outperforms Cohen's  $d$ .

SES: Socio-economic status; sig.: significant; RCT: randomised controlled trial; CRCT: Cluster randomised controlled trial

## Appendix 5. Summary of findings for systematic reviews and meta-analyses included in Question 2

Citation	Article type	Year of publication for studies	Countries included	Designs included	Setting	Population	Content focus	Results
Strategy 1: Support student needs/values								
McQueen, 2006	Systematic review	1981–2006	USA	Experimental studies	Laboratory	Children, adolescents, university students, adults	Self-affirmation manipulations	47 articles reporting on 69 studies; positive effects on attitude change, reductions in prejudice, & downward comparisons.
Yu et al. 2018	Meta-analysis	2006–2016	US, China, Japan, Hong Kong, Taiwan	Correlational studies	N/A	Children, adolescents, college students, adults, seniors	Correlations between the need for autonomy and subjective wellbeing	36 studies; sig. moderate correlations between autonomy and subjective wellbeing ( $r = .46$ ).
Strategy 2: Help young people use language wisely and pragmatically								
Renshaw et al. 2016	Meta-analysis	2006–2014	US, Asia, Europe, Africa	Correlational and experimental studies	School	Aged 8–19 yrs	Gratitude interventions	20 studies; correlational studies indicated small to moderate evidence for gratitude as a subjective wellbeing indicator in youth, however intervention outcomes indicated that gratitude-based interventions are generally ineffective.



van Genugten et al. 2017	Meta-analysis	1994–2012	AU, Israel, USA, Germany, Canada, UK, Slovenia, Spain, Netherlands, Asia, Iceland	Quasi-experimental design, RCTs	School and community settings	Aged 12-18 yrs	Self-regulation techniques within mental wellbeing primary and secondary interventions	40 studies; primary interventions had a small-to-medium effect on self-esteem and internalising behaviour ( $g = .16-.29$ ); Secondary interventions had a medium-to-large effects on internalising behaviour and self-esteem ( $g = .56$ ).
Strategy 3: Help young people to become more mindful (aware and non-reactive)								
Dunning et al. 2019	Meta-analysis	2004–2007	Not stated in review	RCTs	School and clinical settings	Children and adolescents (<19 yrs)	Mindfulness based interventions	33 studies; overall improvement in mindfulness across all interventions; sig. reductions in depression, anxiety/stress, and negative behaviours ( $d = .16-.27$ ).
Takacs & Kassai, 2019	Meta-analysis	1971–2016 (94 published after 2000)	Europe, North America, AU, Asia and South America	RCTs or quasi-experimental studies	School, clinical and laboratory settings	Aged 2–12 yrs	Behavioural interventions for children's executive functions	99 studies; sig. overall improvement in children's executive function tests ( $g = .30$ ).
Zoogman et al. 2015	Meta-analysis	2004-2011	Not stated in review	All designs included (e.g. RCTs, pre-post design), except single study design	School and clinical settings	Aged 6–21 yrs	Mindfulness meditation with youth	20 studies; overall greater improvement for mindfulness condition ( $del = .23$ ). Largest effect was for addressing symptoms of psychopathology ( $del = .37$ ).
Strategy 4: Help young people broaden and build their skills and social networks								

Horn et al. 2010	Single study	2010	Germany	Cluster RCT	School	Grade 8 students	Expressive writing program	Sig. improvements regarding negative affect, grades, and days absent.
Strategy 5: Teach young people perspective taking skills								
Beelmann & Heinemann, 2014	Meta-analysis	1958–2010	US, Germany, Canada, Great Britain, Israel, AU, Finland, Ireland, Portugal	All designs with an intervention and control group e.g. post-control and RCT	Not stated in review	Aged 3–18 yrs	Prejudice prevention interventions	81 articles, covering 122 interventions; overall effective ( $d = .30$ ); highest effects for programs where students had intergroup contact ( $d = .43$ ) and training in perspective-taking/empathy ( $d = .44$ ).
Cheang et al. 2019	Systematic review	2005–2017	USA, AU, Canada, Portugal, Sweden, Brazil	RCTs, quasi-experimental, single group design & multi-group design	School	Aged 6–18 yrs	Mindfulness-based interventions (MBI)	16 studies; MBIs sig. increased empathy; some evidence for increase in self-compassion.
Donald et al. 2018	Meta-analysis	2011–2017	Not specified	Correlational and, non-randomised experiment and RCTs	Not specified	Children, university students and adults	Mindfulness-based interventions	31 studies; mindfulness linked to pro-social behaviour ( $d = .73$ ); mindfulness interventions resulted in greater pro-social behaviour ( $d = .51$ ).
Ferrari et al. 2019	Meta-analysis	2012–2017	UK, Europe USA, NZ, US, Canada, Asia,	RCTs	Clinical, non-clinical community & university settings	Adults	Self-compassion intervention (self-kindness, mindfulness, and connection)	27 studies; sig. improvements in self-compassion scores across interventions ( $g = .75$ ).

Montgomery et al. 2015	Systematic review	1983–2012 (7 published after 2000)	USA, Israel, England, Italy	Cluster RCTs and RCTs	School and clinical settings	Aged 5–15 yrs	Creative bibliotherapy	8 studies; bibliotherapy improved internalising behaviour ( $d$ range .48-1.28) externalising behaviour ( $d$ .53-1.09) and pro-social behaviour ( $d$ range 0-1.2).
Teding van Berkhout & Malouff	Meta-analysis	1973–2012	Not stated in review	RCTs	Clinical, community and university settings	Children, adolescents and adults	Empathy training	18 studies; sig. overall effect ( $g$ = .63). No sig. effect for the four studies focused on children and teens.
Ulger et al. 2018	Meta-analysis	1995–2015	USA, UK, Europe, Israel, AU	Control group designs	School	Aged 4–18 yrs	Anti-bias programs	50 studies; sig. effects ( $d$ = .36) on changing outgroup attitudes; intergroup contact interventions ( $d$ = .46) and multifaceted interventions ( $d$ = .49) most effective.
Strategy 6: Apply the first strategies, as well as the individual youth nested in those groups								
Marshik et al. 2017	Single study	2017	USA	Cross-sectional	School	Third and fifth grade students	N/A	Teachers who report low autonomy at work are less likely to support their students' need for autonomy compared to teachers who report having higher autonomy at work.
Parker et al. 2015	Single study	2015	AU	Cross-sectional	School	15-year-olds	N/A	Individuals from the same friendship group were somewhat similar in hope and wellbeing. Friendship group hope was sig. related to psychological and social wellbeing.

$r$  value is a standardized estimate of the relationship between two variables (e.g. an  $(r = .46)$ . between autonomy and subjective wellbeing indicates that a one standard unit increase in autonomy will result in .46 unit increase in subjective well-being.;  $d$  value: xx;  $r$  value: g value: xx (see above for these definitions). N/A: not applicable; sig.: significant; RCT: randomised controlled trial; MBI: mindfulness-based intervention

