EVIDENCE-BASED INTERVENTIONS AND INITIATIVES TO SUPPORT STUDENT WELL-BEING IN SCHOOLS



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With recent global challenges, including the COVID-19 crisis, well-being among children and adolescents has plummeted in countries around the world (OECD, 2021; UNICEF, 2021). While addressing this issue requires holistic strategies across many different policy sectors and institutions, educational institutions are poised to implement research-based practices and initiatives that can begin to bolster student well-being. OECD describes student well-being as a dynamic state characterised by psychological, social, physical, cognitive, and material factors that enable students to live happy and fulfilling lives (Borgonovi and Pál, 2016; OECD, 2015; OECD, 2017; OECD, 2019). While more research is needed to understand how educational institutions can enhance or thwart student well-being, an emerging evidence base reveals efficacious practices and initiatives (McConville, Hinton & Lee, 2021; Taylor et al., 2022; OECD, 2017). This article highlights evidence-informed approaches that are promising for students across ages and cultures, which include initiatives that foster close social relationships, character skill interventions and programs, physical activity, learning activities that cultivate meaning and purpose, and music and the arts. It also offers promising practices for further exploration, including service learning, playfulness and humour, and connecting with nature.

Evidence-based interventions and initiatives to promote student well-being

1.1.1. Initiatives that foster close social relationships

Close social relationships in schools are undoubtedly linked with many aspects of student well-being (Cotterell, 2007; Danielsen et al., 2011; García-Moya, Moreno & Brooks, 2019; Marquez & Main, 2020; Moore, 2018; Reddy, Rhodes & Mulhall, 2003; Navaneetham & Kanth, 2022). Warm, caring relationships at school are strongly associated with happiness and life satisfaction for students across ages and cultures (Blazar & Kraft, 2017; Demir, et al., 2007; Ferguesson et al. 2015; Froiland et al., 2019; Holder & Coleman, 2009; Marshall, 2001; Roffey, 2012; OECD, 2019; Suldo et al. 2006). Social relationships can also act as a buffer against mental and physical health issues, with social connectedness in childhood and adolescence linked with better immune system health, less depression, less social anxiety, higher levels of self-esteem, and a lower risk of suicide and self-harm (Foster et al., 2017; Maes et al., 2017; Holt-Lunstad, 2022). Moreover, research from around the world shows that positive relationships can also contribute to a sense of purpose (Baumeister & Leary, 1995; Demir et al., 2006; Demir et al., 2011; Furgeson et al., 2015; Marshall, 2001; Lambert et al., 2013; Ryff & Singer, 2000).

Fostering caring relationships with teachers that nurture students' learning and development is fundamental to student well-being. Studies across countries suggest that the quality of teachers is the single most important school factor impacting academic achievement (Chetty et al., 2014; OECD, 2005; Rivkin, Hanushek & Kain, 2005), and relationships with teachers greatly influence student well-being (Blazar & Kraft, 2017; Fergueson et al. 2015; Fredriksen & Rhodes, 2004; Jennings & Greenberg, 2009; Kleinkorres, Stang-Rabrig & McElvany. 2023; Noddings, 1988; OECD, 2005; OECD, 2017; OECD, 2021; Roffey, 2012), particularly for at-risk students (Battistich, 1995;

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¹ While researchers define well-being in various ways, a systematic review indicated that well-being definitions typically include psychological, physical, cognitive, material, and social dimensions (Pollard and Lee, 2003).

Hamre and Pianta, 2005; Moore et al., 2018; Liew et al., 2011). Research across countries links positive teacher-student relationships with a wide variety of positive outcomes related to well-being, ranging from cognitive outcomes such as academic engagement, to social outcomes such as belonging and social connectedness, to psychological outcomes including happiness, school satisfaction, life satisfaction, a sense of agency, positive mindsets, and prosociality (Blazar & Kraft, 2017; Birch & Ladd, 1997; Cornelius-White, 2007; Engels, Colpin & Van Leeuwen, 2016; Federici & Skaalvik, 2014; Fergueson et al. 2015; Fredriksen & Rhodes, 2004; Froiland et al., 2019; Gallagher, 2013; Jiang et al, 2022; OECD, 2017; OECD, 2019; Poulou, 2020; Quin, 2016; Roorda et al., 2011; Suldo et al. 2006). High quality teacher-student relationships are also associated with fewer problematic behaviors, suspensions, and dropouts (Brewster & Bowen, 2004; Green, 1998; Pakarinen et al., 2017; Quin, 2016).

Moreover, experimental studies have demonstrated that interventions targeting teacher-student relationships can effectively foster stronger teacher-student bonds as well as increase social, psychological, and cognitive well-being outcomes, such as prosocial behaviours, academic engagement, and academic achievement (Borman et al., 2021; Cook et al., 2018; Hoogendijk et al., 2020; Gehlbach et al., 2016; Harsejghasemi et al., 2022). A meta-analysis of programs aimed at strengthening teacher-student relationships identified effective practices, such as praise, reflective and supportive listening, and coaching and validating emotions, among many others (Kincade, Cook & Goerdt, 2020). Training teachers in social-emotional skills such as those can greatly support teacher-student relationships (Schonert-Reichl, 2017; Schonert-Reichl, Kitil & Hanson-Peterson, 2017).

Research shows that interventions and initiatives that nurture friendships at school can also lead to greater well-being in students (Roffey, 2012). Randomised controlled trials on interventions that support peer relationships among primary and secondary school students have found positive effects on students' emotional regulation, self-concept, coping skills, and prosocial behaviour (Fraser et al., 2004; Goswami, 2012; Katz, Mercer & Skinner, 2020). Studies have also shown that friendships at school are associated with a wide range of positive well-being outcomes, including happiness and life satisfaction (Demir, et al., 2007; Holder & Coleman, 2009; Marshall, 2001), belonging (Cartwright, 2007; Cotterell, 2007: Hamm & Faircloth, 2005), social-emotional skills (Thomas et al., 2022: Wagner et al., 2019), and mental and physical health (Baker & Galmbos, 2003; Roach, 2018; Zambon et al., 2006). Inversely, loneliness and bullying in adolescents are associated with adverse mental health outcomes and even suicide (Cui et al., 2011; PISA, 2018; Roach, 2018). Monitoring students' self-reported experiences with peer relationships at school can provide insights into which students may be at-risk of isolation, loneliness, and other negative well-being outcomes so that schools can provide targeted interventions to support them.

Alongside interventions to cultivate enriching teacher-student relationships and friendships, schools can more broadly foster a positive whole-school community. A positive school climate, which involves close relationships among students, teachers, and staff (Aldridge & McChesney, 2018; Hoy & Sweetland, 2001), is associated with students exhibiting greater overall well-being and better mental health, including higher self-efficacy, fewer depressive symptoms, less hopelessness, and less stress at school (Aldridge & McChesney, 2018; Ford et al., 2021; Kutsyuruba, Klinger & Hussain, 2015; Lombardi, 2019; Nie, 2020; Roffey, 2012; Way, Reddy & Rhodes, 2007; Wong, 2021) as well as improved academic achievement (Hoy, Hannum & Tschannen-Moran, 1998; MacNeil, Prater & Busch, 2009; Martin & Dowson, 2009; Kutsyuruba, Klinger and Hussain, 2015; Wang et al., 2020; Way, Reddy, Rhodes, 2007) and equity (Aldridge et al., 2016; Berkowitz et al., 2017). Likewise, school connectedness is related to positive mental health and well-being in students (Kidger et al., 2012; Olsson et al., 2013; Shochet et al., 2006), and a sense

of belonging in the school community is correlated with greater life satisfaction, better health, higher academic achievement, and positive psychological outcomes such as a mastery goal orientation and greater self-efficacy in students (Korpershoek et al., 2020; O'Brien and Bowles, 2013; OECD, 2017; OECD, 2019).

Further, research suggests that interventions that encourage a positive school community can effectively boost well-being in students of various ages and cultures. For example, an experimental study with primary school students in France showed that an intervention that cultivated a sense of belonging in the school community effectively increased students' life satisfaction (Dunleavy & Burke, 2019). Likewise, a longitudinal study with secondary school students in Israel suggested that a positive psychology intervention led to increased self-esteem, self-efficacy, and optimism as well as reduced anxiety, depression, interpersonal sensitivity, and general distress (Shoshani & Steinmetz, 2014). More research is needed to determine the impact of various programs and initiatives to create a positive school community on student well-being. Nevertheless, taken together, the evidence is clear that initiatives to foster positive relationships at school have tremendous potential to support students' well-being across ages and cultures.

1.1.2. Character skill interventions and programs

Research suggests that interventions and programs to develop students' character skills, or social-emotional skills, can boost well-being for students across ages and countries (Bonell, 2018; Dix et al., 2020; Durlak, 2011; Hurry, 2021; Lindorff, 2018; Sklad, 2012; Taylor et al., 2017; Wigelsworth, 2016). Interventions and programs targeting character or socialemotional skills have been shown to affect a host of outcomes related to well-being, including: happiness, healthy habits, and physical health (Bayarian et al., 2016; Curry et al., 2018; Davis et al., 2016; Emmons & McCullough, 2003; Kirby et al., 2017; Post, 2005; VanderWeele, 2020); social skills, character skills, prosocial behavior and relationships (Alan & Ertac, 2018; Ashdown & Bernard, 2012; Barrington, Hancock & Clough, 2019; Binfet, 2015; Diebel et al., 2016; Durlak, Weissberg, Dymnicki et al., 2011; Goldberg et al., 2019; Jans-Beken, 2020; Kerr et al., 2015; Layous et al., 2012; Lee & Huang, 2021; Moltrecht et al., 2021; Oğuz-Duran & Kaya-Memiş, 2017; Sklad et al., 2012; Waters, 2011; Weare & Nind, 2011; Weziak-Białowolska et al., 2021); metal health, including depression and anxiety (Blank et al., 2010; Cadwell et al., 2019; Ford et al., 2021; García-Carrión et al., 2019; Kirby et al., 2017; Cregg & Cheavens, 2020; Seligman et al., 2005; VanderWeele, 2020; Wade et al., 2014; Weare & Nind, 2011; Weziak-Białowolska et al., 2023); misconduct, bullying, substance abuse, absenteeism, suspensions, and school dropouts (Andersen et al., 2018; Bonell, 2018; Duncan, 2017; Li et al., 2011; Sklad, 2012; Snyder et al., 2010); and educational test scores (Alan et al., 2019; Ashdown & Bernard, 2012; Durlak, Weissberg, Dymnicki et al., 2011; Krane et al., 2016; Lam & Zhou, 2019; McCormick, 2021; OECD, 2021; Sánchez & Vakis, 2020; Sklad, 2012; Snyder et al., 2010; Zins, Bloodworth, Weissberg, Walberg, 2004).

Taken together, this research suggests that implementing character and social-emotional programs has great potential to impact a wide range of student well-being outcomes. A systematic review of social-emotional programs provides suggestions for elements to consider incorporating into such programs, such as a significant teacher training component, multiple sessions, and reinforcement of social-emotional skills both in the curriculum and in teacher-student interactions, among others (Adi et al., 2007). Holistic approaches that integrate character skills and academic knowledge have also been shown to be effective for strengthening outcomes related to both (Brush, Jones, Bailey, et al., 2022; Jones, Brown & Aber, 2011; Porticus, The Lego Foundation & Jacobs Foundation, 2023), and provide a strategic solution to the challenge of integrating character skills into

the curriculum along with increasing academic knowledge given time constraints in schools. There are countless promising interventions, programs, and initiatives for many different character skills. As illustrative examples, we will focus on initiatives to promote kindness, gratitude, emotional regulation, and resilience, all of which have substantial evidence for potential impact on student well-being.

Kindness interventions have been shown to support student well-being in various ages and cultures. A randomised control trial with students aged 9-11 in Canada demonstrated that students who intentionally performed three acts of kindness a week for four weeks showed a significant increase in peer acceptance relative to controls (Layous et al., 2012), while a randomised control study with students aged 10-13 in the UK and Spain showed that a kindness scavenger hunt intervention can effectively increase kindness (Hinton et al., forthcoming). Another randomised control trial with preschoolers in the US indicated that children who participated in a kindness intervention for twelve weeks had significant improvements in social and cognitive outcomes, including cognitive flexibility and delayed gratification, when compared to a control group (Flook et al., 2015). Moreover, studies on students from around the world - ranging from primary students in Turkey (Oğuz-Duran & Kaya-Memiş, 2017) to secondary students in Hong Kong (Lee & Huang, 2021) - have linked students' experiences with kindness at school with positive feelings about their relationships at school.

Research suggests that gratitude interventions that are easy to implement can promote well-being in children and adolescents as well (Davis et al., 2016). A randomised-control study with primary school students showed that children who kept a gratitude diary each day for four weeks developed a greater sense of belonging (Diebel et al., 2016). Another randomised-controlled trial with secondary school students found that students who listed up to five things that they were grateful for each day for two weeks had significantly higher optimism and life satisfaction and lower negative affect, relative to controls (Froh, Sefick & Emmons, 2008). While more research is needed to understand the potential impact of school-based gratitude interventions on student well-being in various contexts, gratitude has been associated with a variety of positive outcomes in students across various cultures, including school satisfaction, life satisfaction, positive affect, motivation, engagement, academic achievement and overall well-being (Datu and Mateo, 2015; Gulliford, 2019; Khanna and Singh, 2016; King, Alfonso, Datu, 2018; Tian et al., 2016).

Emotional regulation, which has been defined as the active process of influencing the types of emotions we experience as well as when and how we express such emotions (Gross, 1998), is a core competency for student well-being and learning. Systematic reviews of emotional regulation interventions suggest that emotional regulation can act as both a promotive and protective factor for psychological and behavioural outcomes related to well-being for children and adolescence in a variety of diverse samples (Daniel et al., 2020; Moltrecht et al., 2021; Morrish et al., 2018). For example, emotional regulation training has been shown to reduce psychopathology, a sign of mental ill health, across the developmental spectrum (Aldao et al., 2010; Daniel et al., 2020). Research shows that emotional regulation is also positively associated with resilience as well as negatively associated with overeating behaviour and adverse peer experiences such as bullying (Favieri et al., 2021; Herd & Kim-Spoon, 2021; Aldao et al., 2017). Moreover, emotions play a fundamental role in learning in the brain (Hinton, Miyamoto & della-Chiesa, 2008; Immordino-Yang & Damasio, 2007) so learning to regulate emotions is an instrumental skill for learning. The evidence suggests that investing in programs to support student emotional regulation can bolster well-being outcomes for a wide variety of students.

Resilience, which has been defined as "the capacity to bounce back from adversity" (Allen, 2014: 4), is an essential component of student well-being. Research suggests that resilience

in students has cascading developmental effects into adulthood, shoring up a variety of cognitive, socio-emotional, and relationship skills (Masten & Tellegen, 2012; OECD, 2018). Longitudinal research shows that resilience in childhood leads to better relationships with classmates, a more positive self-concept, more self-control, more achievement orientation, greater independence and assertiveness, particularly for females, and better reading and reasoning skills in adulthood (Werner & Smith, 2001). A variety of school-based interventions have been shown to effectively build resilience in students (Allen, 2014).

Future research will no doubt continue to uncover multifaceted social-emotional-cognitive skills that schools can develop to support student well-being in an increasingly complex and internationally interdependent world. These skills may range from global competence (della Chiesa, Scott and Hinton, 2012; OECD, 2018) to self-awareness and collaboration (UNESCO, 2017) to ethical decision making, adaptive problem solving, and aesthetic perception (Stevenson, 2022).

1.1.3. Physical activity

Physical activity programs at school promote student well-being in multiple ways, from supporting physical and mental health to improving cognitive outcomes such as executive control (Bidzan-Bluma & Lipowska, 2018; Salmon et al., 2023; Biddle & Asare, 2011; Watson et al., 2017). Students report higher levels of well-being immediately after exercise, and those who engage in frequent exercise, such as through organised sports, report higher levels of well-being compared to students who do not (Sibley & Etnier, 2003; Kleszczewska et al., 2018).

Research confirms that physical activity interventions in schools effectively support students' physical health. Positive physical health effects from such interventions include improvements to students' body mass index and waist circumference and lower systolic blood pressure (Salmon et al., 2023). Physical activity interventions have also been linked to improved motor skills, muscular fitness, cardiorespiratory function, and brain health (Bidzan-Bluma & Lipowska, 2018; Bermejo-Canterero et al., 2021; Drollette et al., 2018). School-based interventions may have lasting impacts on students' exercise habits. For example, a randomised control trial of a physical activity intervention with secondary students in Australia revealed increased physical exercise among students who previously participated in the program after the program ended (Sutherland, 2017).

Physical activity interventions have also been shown to support students' mental health. The development of a youth sports mentorship program across 12 Hong Kong schools showed significant increases not only to participants' physical strength, but to their mental well-being, resilience, and social connectedness as well (Ho et al., 2017). Physical activity also protects against excessive body image concerns, which can have a negative impact on student well-being (Gaspar et al., 2011; Rees & Main, 2015), particularly for female students (Marcote, 2002), and there is an association between being overweight in childhood, poorer mental health, and engaging in more risky behaviour (Verplanken & Velsvik, 2008). Physical activity appears to have school-specific mental health benefits as well. On average across OECD countries, students who reported taking part in some moderate or vigorous physical activity were less likely to feel very anxious about tests, less likely to feel like an outsider at school, and less likely to be frequently bullied at school than students who did not engage in physical activity (OECD, 2015).

Physical activities at school, including active learning pedagogies, have also been shown to improve students' cognitive abilities and learning. Classrooms that incorporated physically active lessons into the Mathematics and English Language curriculum of students aged 8-9 showed synergistically improved cognitive function and flexibility across

a range of tasks, including digit span, coding, academic reasoning, and gross motor skill tasks (Boat et al., 2022). Another study of students aged 7-9 showed causal impact of a physical activity program on improved executive control, cognitive flexibility, and inhibition (Hillman et al., 2014). Moreover, research demonstrates that active learning can improve academic achievement. A systematic meta-analysis showed classroom-based physical activity interventions had a positive effect on on-task behaviour as well as off-task behaviour, leading to improvements in academic achievement (Watson et al., 2017). These benefits may even persist over time. A 9-month intervention that promoted 90 minutes per week of moderate to vigorous physically active lessons for 7–9-year-olds showed higher academic achievement in a 3-year follow up.

Despite the clear impact of physical activity at school on many aspects of student wellbeing, most secondary schools in OECD countries offer students only one hour of structured physical activity per week, which is not consistent with the World Health Organization's recommendation of one hour of physical activity per day (OECD, 2017). This is a critical gap, as evidence mounts to establish a connection between sedentary behaviour and poor mental and physical health (Biddle & Asare, 2011; Huppert, 2009). Although more research is needed to explore potential causal links, sedentary behaviour and social media may contribute to a vicious cycle of diminishing well-being of students, as highlighted by recent PISA reports (OECD, 2019). Indeed, a recent World Happiness Report highlights that adolescents who spend long hours sedentary, at least six per day, are less happy than those in previous, less digitally-connected, generations (Helliwell et al., 2019; OECD, 2017). Schools have an opportunity to establish healthy activity habits in children and adolescents, habits that tend to persist into adulthood (Hallal et al., 2006). Better physical health in childhood has been linked to better economic, occupational, and well-being outcomes later in life (Currie, 2005, 2009; Jackson 2010, 2015, Patton et al 2016; Poulton et al, 2002).

1.1.4. Learning activities that cultivate meaning and purpose

Having a clear sense of meaning and purpose is linked to greater well-being and better mental health outcomes in students (Chen & Cheng, 2020; Chen et al., 2019; Chen et al., 2022). Meaning involves finding significance and worthwhileness in the activities we are engaged in (King et al., 2016). Purpose also contributes to a meaningful life, but it is distinguished from it as it is more future-oriented and entails having meaningful goals and direction (Martela & Steger, 2016).

Offering structured self-reflection activities to students is a promising way for schools to support the search for meaning and purpose. These exercises can help students resolve questions that are critical for the exploration of identity, meaning, and purpose, such as: Who am I? Where am I headed in life? (Hill & Burrow, 2012; King et al., 2020). Self-reflection exercises that focus on future goals and plans have been shown to improve secondary students' sense of internal control, purpose, and academic achievement (Pizzolato et al., 2011).

Encouraging reflections on personal values and beyond-the-self goals has also been shown to positively impact a clear sense of purpose (Riches, 2020). Beyond-the-self goals involve how we can serve others and the broader society. Engaging students in reflections on how they might use their education to serve beyond-the-self goals can positively impact perceived meaningfulness of schoolwork, improve persistence in studying, and boost academic achievement (Yeager et al. 2014). When students explore their personal values, strengths, and beyond-the-self goals and discuss these with supportive mentors and peers, it can bring a host of positive outcomes related to well-being including: greater self-efficacy, a decrease in orientations for social comparison, competition, and fear of failure,

higher grades, and a greater beyond-the-self purpose, or calling to make a positive difference in the world (Sepulveda et al., 2021).

There is some evidence to suggest that a sense of meaning and purpose in life may also be enhanced by enabling students to engage in activities that make a positive social contribution. Looking at a variety of extra-curricular activities, a longitudinal study presented suggestive evidence that engagement in leadership activities at the start of secondary school was positively related to sense of purpose two years later, especially among students who found leadership meaningful (Bundick, 2011). Another intervention study engaged adolescents in games that compelled them to act prosocial and found improvements in their beyond-the-self purpose, self-efficacy, and academic achievement (Riches, 2020). Studies with university students have shown improvements in a sense of meaning in life after engagement in prosocial activities such as helping others (Klein, 2017) – which could be applicable to younger students, although more experimental studies with younger students are needed to explore that possibility.

Cultivating meaning and purpose seems to support student well-being, but more research is needed to identify effective approaches across different ages and cultures. For primary school students, schools can begin by encouraging children to develop intrinsic motivation for learning by supporting their autonomy, competence, and social connectedness (Ryan & Deci, 2017; Ryan & Deci, 2000) as well as cultivating their personal interests (Harackiewicz et al., 2016). There is research showing the benefits of purpose in multicultural contexts (Damon & Malin, 2020) and for adolescents who experience marginalisation (Sumner et al., 2018), but more research is needed to understand how to best support the development of purpose in a diversity of students across cultures.

1.1.5. Music and the arts

There is growing evidence that music, drama, and art programs in schools have the potential to support many facets of student well-being. Participation in these creative programs has been linked to increased social connections, the development of character skills, higher levels of happiness and life satisfaction, and improved mental and physical health.

Arts programs offer an opportunity for students to strengthen social bonds with their fellow classmates and beyond. Collaboration among peers has been found to grow over time when focused on a group art project, such as creating an opera, and students who participated in group art projects had more meaningful interactions when compared to students in alternative settings (Wolf, 1999; Lee et al., 2017). Researchers have also found fewer peer relationship problems among children aged 8-10 years old who participated in performance art or music (Archbell et al., 2019). In a mixed methods case study across five UK schools, when asked, primary school students "clearly perceived that the arts facilitate their social and personal development" (Harland et al., 2000: 87). Social gains may have the potential to be lasting as well, as an experimental study on an arts intervention demonstrated that students made gains in prosocial attitudes toward outgroups that persisted for six months after the intervention (Van de Vyver, J. et al., 2019). Moreover, research indicates that performances by students at school, such as plays or recitals, foster social connection throughout the whole school community (Pitts, 2007). Further, art interventions have also been found to be positively associated with connections with the broader community, such as youth mentorship opportunities and ties with community organisations (Stone et al., 1998).

The social benefits of art and music programs may hold particular promise for students with social or academic challenges. Researchers have found that for children with learning disabilities, participation in a creative drama program significantly increased their social skills compared to a control group (De La Cruz et al., 1998). Other researchers have pointed

out that group music making breaks down barriers, and tackles the problem of social exclusion of autistic students, corresponding to a 20% decrease in victimisation from their neurotypical peers (Cook, et al., 2019). Further, a qualitative study conducted with at-risk and incarcerated adolescents who participated in jazz and hip hop dance classes twice a week for 10 weeks found that the program fostered the participants' social development and self-perception (Ross, 2002).

Through art programs, students also have the opportunity to build character skills (Vazquez-Marin, Cuadrado, and Lopez-Cobo, 2022), as "the artistic and social-emotional aspects are always happening simultaneously" (Farrington et al., 2019: 4). These programs offer children and adolescents an opportunity to build self-management and discipline (Farrington et al., 2019) as well as competence, confidence, and care (Barret et al. 2015). Research has also shown gains in self-concept, motivation, empathy, and tolerance among students who participate in music and the arts (Catterall et al., 1999). A review of academic literature indicates that participation in arts programs, when compared to control groups without arts, has been associated with boosts in a range of psychological, cognitive, and health outcomes, such as self-esteem, academic knowledge, and physical activity, among others (Daykin et al., 2008).

There is a substantial amount of research to suggest that music and arts programs in school can support happiness among a diversity of students across various cultures. The creative activities can be both fun and memorable, as one study demonstrated how moments of high salience from an elementary school musical theatre program are easily recalled years later (Ogden, 2009). For students from low socioeconomic backgrounds in particular, participation in music programs can have significant positive associations with happiness, emotional regulation, life satisfaction, and optimism, as one recent study of 61,759 Australian students demonstrated (Kennewell et al., 2022). Other researchers investigating music programs have theorised how these programs boost student mood-regulation, offering resources for increasing and restoring well-being, and foster an emotional life that is more varied and colourful (Saarikallio & Erkkilä, 2007). Results of happiness through art and music programs have been replicated in various countries. For example, for 11-12year-old students in Turkey, a strong correlation has been found between the degree of practice in an art program and students' self-reported level of happiness (Slimoon et al., 2018). While in Spain, members of youth bands and choirs reported being highly satisfied with their lives (Oriola-Requena et al., 2021).

There is evidence to suggest that arts and music programs may support student mental and physical health as well. In one study, students reported how active involvement in ensemble music provides a relaxation outlet during demanding study periods (Kokotsaki & Hallam, 2011). Student choral singers have reported both mental and physical health benefits of singing together, citing the improved mood and stress reduction, as well as improved lung function and breathing (Clift & Hancox, 2001). Consistent with this, after participating in choral singing, students have been found to have lower levels of the stress hormone cortisol and higher levels of IgA, an important antibody of the immune system, in their saliva samples (Beck et al., 2000). Collectively, this research suggests that investing in music and arts programs is likely to be an effective way to foster many aspects of student well-being.

Promising research-informed practices and initiatives to support student well-being

This area of research is still emerging so there is great promise for uncovering many more diamonds of interventions and initiatives that support student well-being. While we certainly encourage educational institutions to implement evidence-based practices and initiatives, we also see value in further experimentation with innovative practices and initiatives, especially if there is an opportunity to study their impact. Monitoring student

well-being along with educational practices and initiatives that aim to target student well-being can help build a stronger evidence base. Research is beginning to give us glimpses into promising approaches for further exploration that have a growing evidence base but require further research, such as service learning, playfulness and humour, and connecting with nature.

1.1.6. Service learning

A growing body of research suggests that school-based service-learning and volunteering programs can have benefits for the well-being of students (Billig, 2000; Donnel et al., 1999, Celio et al., 2011). A meta-analysis of the impact of service-learning across 62 studies and 11,837 students demonstrated significant gains when compared to controls in participants' social skills, academic performance, and attitudes towards self, school, and learning (Celio et al., 2011). Additionally, other reviewers have found that service learning can build cohesion among students and their teachers, lead to a greater acceptance of cultural diversity, and increase knowledge of career opportunities (Billig, 2000). These benefits nurture many dimensions of well-being, including social connection, academic learning, and the development of purpose and meaning. Service-learning benefits are greatest when the service-learning involves clear links to school curriculum, student agency and voice, community involvement, and a reflection activity (Celio et al., 2011). Community service may be particularly beneficial for at-risk youth in urban environments (Donnel et al. 1999). The National Youth Leadership Council in the US offers a benchmark to predict the impact of service-learning and volunteering opportunities for at-risk adolescents, namely the activity's duration and intensity, the links to curriculum, strength of community partnerships, meaningful service, inclusion of youth voice, reflection, diversity, and consistent progress monitoring (Nelson & Sneller, 2011). While more research is needed to support the growing consensus among service-learning guidelines, research suggests that service-learning has the potential to support student well-being while also strengthening bonds both within schools and to the larger community.

1.1.7. Playfulness and humour

Research suggests that encouraging play in school can also support student well-being, including physical and mental health, social bonds, and character skills as well as motivation and retention (Pinchover, 2017; Pryor et al., 2018; Hewes, 2014; Ginsburg, 2007; Farley et al., 2021; Pryor & Ruch, 2011). Likewise, humour can support student well-being and learning. Research has shown that resilient secondary students often use humour to defuse stressful situations and enhance socio-emotional functioning (Cameron, Fox, Anderson & Cameron, 2010). Further, neuroscience research suggests that humour can actually improve our memory of information (Coronel et al., 2021). Indeed, research shows that humour can facilitate students' learning in schools by encouraging active participation, reducing anxiety, and ultimately improving retention (Elkhayma, 2021). While more research is needed, there is evidence that these learning gains can be reflected in test scores. For example, the implementation of humour in language classes has been shown to boost student performance on national exams (Swanson, 2013). More research is needed to better understand how playful and humorous pedagogies can be used in schools to enhance student well-being and learning outcomes.

1.1.8. Connecting with nature

Spending time in nature is another way to promote student well-being, bringing short-term boosts in attention and improving cognition while also easing anxiety and depressive symptoms (Ulrich, et al., 1991; Berman, et al., 2012; Kaplan & Berman 2010).

Neuroscience and psychology research suggests that experiences in nature can have restorative benefits, reducing rumination in the brain and resetting our thoughts (Berman et al., 2014; Bratman et al., 2015; Kaplan, 1995). Although to date few randomised control experiments have been completed in schools, the initial evidence from pilot studies in nature have shown promise for promoting a healthy lifestyle in early childhood and nurturing self-esteem in adolescents (Reed et al., 2013; Sobko et al., 2016). Furthermore, interventions that establish school community gardens have shown significant increases in nutritional knowledge, scientific knowledge, and a preference for eating vegetables (Wells et al., 2015; Van den Berg et al., 2020). Educational approaches that support students' connection and communion with nature are cost-effective means to promote well-being, while offsetting some of the stresses associated with growing up in an ever-increasingly urbanised and digitally dependent society.

Education for flourishing

Students' well-being is inextricably entwined with the larger society and natural environment in which we all live. Education that aims to support student well-being might ultimately therefore set its sights on education practices and initiatives that bring about flourishing (Brighouse, 2008; White, 2011; Kristjánsson, 2020; Carr, 2021; Ellyatt, 2022; VanderWeele, 2017; VanderWeele, 2022; Stevenson, 2022; de Ruyter et al., 2022; Siegel, 2023). Flourishing, in its most expansive sense, is "the relative attainment of a state in which all aspects of a person's life are good, including the contexts in which that person lives" (VanderWeele and Lomas, 2023: 29). Education for flourishing in principle might therefore encompass the flourishing of students as well as the flourishing of the communities and the natural environment in which students live (VanderWeele and Hinton, forthcoming). Our vision is for education to support student well-being in equitable and sustainable ways that also promote the interdependent flourishing of our global community and our shared planet.

Acknowledgements

We would like to thank Laura Taylor and team for their in-depth review of research on well-being in education in childhood and adolescence, which greatly enriched this work. A special thanks also to Tyler Vanderweele for his thought leadership in education for flourishing. We would also like to thank the following colleagues for their support with the academic literature search for this publication: Yash Arora, Vivian Fang, María José de León Mazariegos, Lily Massaro, Manee Ngozi Nnamani, Ailyn Alissandra Alvarez Perez, Morgan Solender, Whitney Warren, and Zhiyu Zhao.

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