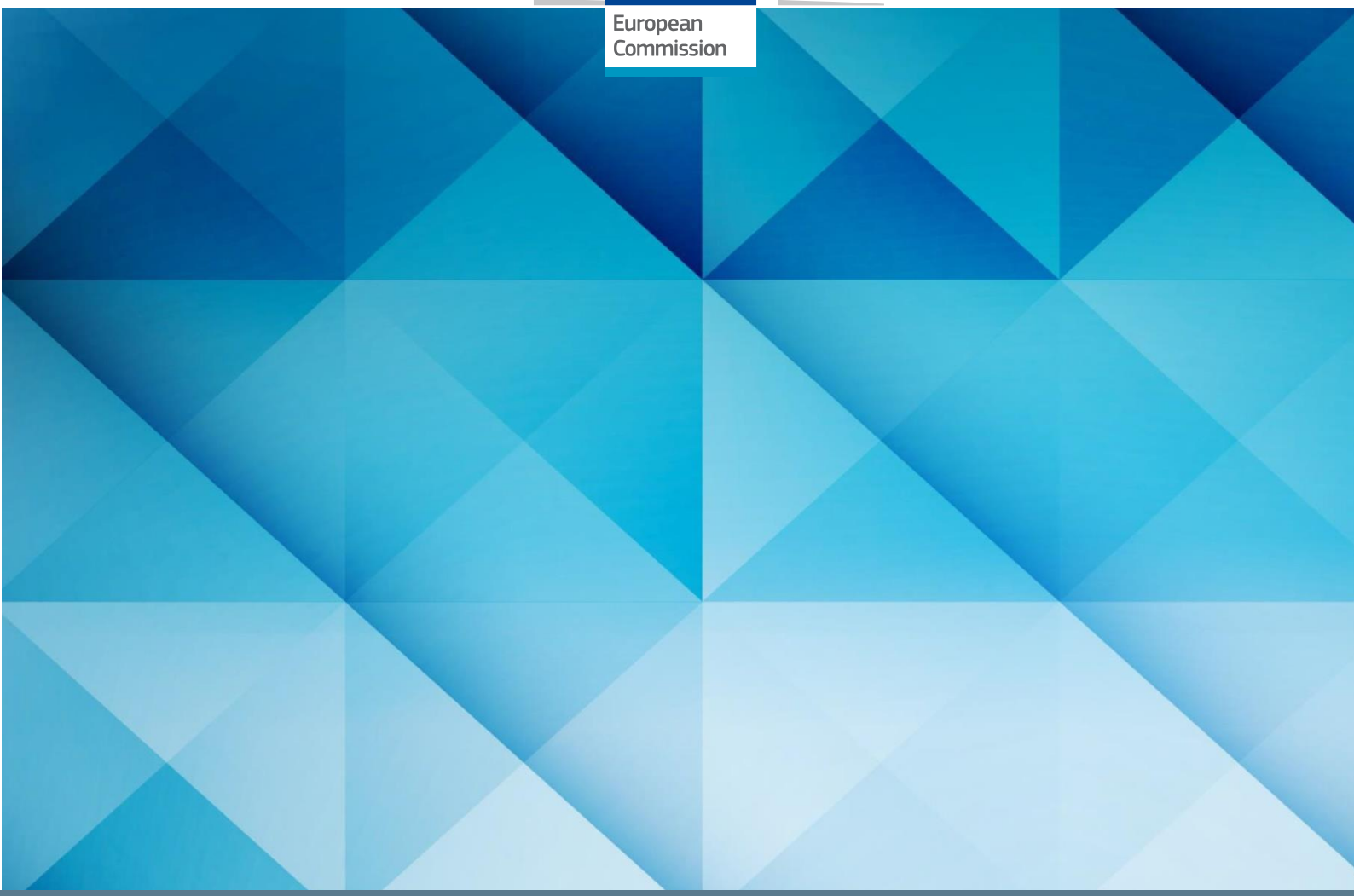

Student well-being and learning for sustainability

Synergies and shared challenges

NESET ad hoc question No. 01/2023

Education and Training

Please cite this publication as:

Disterheft, Antje (2023). 'Student well-being and learning for sustainability. Synergies and shared challenges', *NESET ad hoc report*.

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Student well-being and learning for sustainability

Synergies and shared challenges

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Directorate-General for Education, Youth, Sport and Culture

2023 EN

Table of contents

1. Introduction

Well-being (WB) and Learning for Sustainability (LfS) are two concepts and areas of concern for further action that are receiving increasing attention from policy makers, scholars, educators and many others, due to their relevance in developing of societies fit for the future.

In the time of writing of this *ad hoc* paper, two important reports have recently been published: *The World Happiness Report 2023* (Helliwell et al., 2023b), with its focus on the state of people's happiness and well-being around the globe, and the IPCC's Synthesis Report for the Sixth Assessment Report on Climate Change (IPCC, 2023), underlining the urgency for societal transformations in order to achieve the Paris agreement and limit global warming to a maximum temperature rise of 1.5°C. Both reports indirectly imply the importance of looking at interlinkages and synergies between well-being and LfS in maintaining Planet Earth as a liveable planet for human and non-human species. First, human well-being depends on the vitality of the planet's ecosystems. Second, both reports are based on the view that anthropogenic environmental changes can be reversed by increasing awareness and enhancing human capacities for positive change towards a more sustainable future. Third, both reports also share the idea of empowerment and agency – i.e. becoming aware of what is, and being empowered to change it for the better. While the *World Happiness Report* demonstrates the current state of well-being around the globe, the IPCC Assessment Report provides us with current and future scenarios for human-made climate change, underlining the urgency and responsibility to take strong action to mitigate the consequences of global warming.

The first section of this *ad hoc* paper introduces the conceptualisation and agendas for well-being and LfS in order to provide the essentials of their theoretical (and political) contexts. The second section maps out four synergies between the two concepts, beginning by explaining how these synergies were identified and going on to elaborate each of them, namely:

(i) Synergy I – Becoming aware of the mind-body connection.
(ii) Synergy II – Strengthening nature-connectedness.
(iii) Synergy III – Facing and dealing with (difficult) emotions.
(iv) Synergy IV – Fostering happiness and resilience.

The third section of the paper provides selected inspiring examples of schools, projects and learning environments in which (some of) these synergies have been put into place. The *ad hoc* paper concludes by pointing to future avenues for research, and listing some of the shortcomings and necessary cautions to consider when advancing policies in these fields.

In this *ad hoc* paper, LfS is used as an umbrella term for sustainability-related education, and is used interchangeably with Education for Sustainable Development (ESD) and Education for Sustainability (EfS). The term refers to all educational levels, from early childhood to lifelong learning; however, in this report the focus is placed on formal education – in particular, primary and secondary education.

1.1 Conceptualisation of well-being and key areas for action

Being a multidimensional concept, there is no universal definition of well-being. In both academic and popular literature, however, well-being is equated with the terms quality of life, happiness, life satisfaction, and prosperity (Eger & Maridal, 2015).

While ideas about well-being have their roots in the debates of ancient Greek philosophy and literature about happiness (*eudemonia*) and a life worth living (Eger & Maridal, 2015), in our industrial era it has become associated with the standard of living, with a focus on objectives measures such as those regarding safety, educational attainment, income, life satisfaction, and so on. More recently, the focus has shifted towards a broader understanding of well-being, also including subjective measures concerning an individual's perceptions of life satisfaction and happiness (VanderWeele et al., 2020). Recently, such shifts have also been fostered by the impacts of the COVID-19 pandemic, which led to a greater focus on well-being across society in general, but especially on well-being in schools (Koehler et al., 2022).
While measures have been developed that focus on either objective or subjective well-being (Voukelatou et al., 2021), in recent times, more integrative approaches[1] to well-being have been chosen as frameworks to determine individual and societal well-being (Table 1). Some scholars have criticised the fact that planetary well-being is given insufficient consideration in these measures, since they do not pay enough attention to the effect of environmental impact and related injustices on well-being (Costanza et al., 2016; Dietz et al., 2009; Helne & Hirvilammi, 2015; Hot or Cool Institute, 2023; O'Brien, 2016). Such critics advocate instead for "sustainable well-being and happiness" within planetary boundaries, and for a more relational approach to sustainable well-being (Helne & Hirvilammi, 2015; Kjell, 2011) (see also Section 2 for further details).
The Happy Planet Index, for example, combines therefore life expectancy, experience of well-being and ecological footprint (Hot or Cool Institute, 2023) (Table 1).

Table 1. Examples of current integrative measures of well-being

Name	Characteristics / Dimensions included	Scope/Level	References
Wellbeing Theory (PERMA-Model)	1) Positive emotions (P) 2) Engagement or flow (E) 3) Positive Relationships (R) 4) Meaning or purpose (M) 5) Accomplishment/Achievement (A)	Individual	(Seligman, 2011; Madeson, 2017)
Ryff Wellbeing Scale (Scale of Psychological Well-Being)	1) Self-acceptance 2) Positive Relationships with others 3) Autonomy 4) Environmental mastery 5) Purpose in life 6) Personal growth	Individual	(Ryff & Keyes, 1995)
Gallup-Healthways Well-Being Index *(used in World Happiness Reports)*	1) Life evaluation 2) Emotional health 3) Physical health 4) Healthy behaviours 5) Work environment 6) Access to basic needs	National state International rankings	(Kahneman & Deaton, 2010; Gallup, 2023)

[1] "Integrative" refers to the combination of objective and subjective measures of well-being, as well as of eudaemonic and hedonic approaches. The eudaemonic approach builds on Aristotle's ideas of living a virtuous and flourishing life in which one can pursue self-realisation, whereas the hedonic approach focuses on the importance of feeling good and avoiding pain (Adler & Seligman, 2016; VanderWeele et al., 2020).

Name	Characteristics / Dimensions included	Scope/Level	References
Your Better Life Index	*Eleven topics are considered essential to quality of life:* (1) housing, (2) income, (3) jobs, (4) community, (5) education, (6) environment, (7) governance, (8) health, (9) life satisfaction, (10) safety, and (11) work-life balance	National state International rankings	(OECD, 2020)
Sustainable Well-Being Index	*Considers three major domains contributing to well-being:* 1) Net economic contribution, in combination with the genuine progress indicator (GPI) 2) Natural capital/ecosystem services contribution 3) Social capital/community contribution	National state International rankings	(Costanza et al., 2016, p. 353)
Happy Planet Index	(1) Life expectancy, experience of well-being (based on Gallup's Well-Being Poll) and ecological footprint (as calculated by the Global Footprint Network)	National state International rankings	(Hot or Cool Institute, 2023)

Source: (author's own compilation, based on the literature review for this paper)

Another fairly integrative approach is also reflected in the **Geneva Charter for Wellbeing** (World Health Organization, 2022), which was endorsed during the 10th Global Health Conference coordinated by the World Health Organization. It called for "sustainable well-being societies", and outlined five key areas for action:

1. design an equitable economy that serves human development within planetary boundaries;
2. create public policy for the common good;
3. achieve universal health coverage;
4. address the digital transformation to counteract harm and disempowerment and to strengthen the benefits; and
5. value and preserve the planet.

While the Charter lacks more concrete definitions, timelines and indicators to measure progress towards its goals, it can be acknowledged as the first time that the term "sustainable well-being societies" was introduced as a key theme for global health.

In particular, the World Health Organization draws attention to mental health, which is defined as "a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community" (World Health Organization, 2023b).

Mental health is regarded as fundamental to human beings' "collective and individual ability to think, emote, interact with each other, earn a living and enjoy life", and therefore constitutes a priority to be promoted, protected and restored in all societies around the world (World Health Organization, 2023a). The World Happiness Report 2023 concludes that social support is the main predictor of happiness and well-being (Helliwell et al., 2023b).

1.2 Learning for Sustainability – agendas of the 'ESD for 2030' roadmap and the European Union's GreenComp Framework

LfS builds on a long line of research and educational practice, encompassing environmental education; education for sustainable development (ESD) / education for sustainability (EfS); climate change education; as well as peace and global citizenship education, among others (Agbedahin, 2019; Bianchi et al., 2022). In recent decades, LfS has developed towards a shared understanding of more holistic approaches towards learning, stemming from the theories of social learning, service learning and transformative learning (Rodríguez Aboytes & Barth, 2020; Wals, 2011). These advocate for "a quality of learning that is deeply engaging, and touches and changes deep levels of values and belief through a process of realisation and recognition"(Sterling, 2010, p. 512). The latest ESD for 2030 roadmap (UNESCO, 2020) reflects this development in terminology when defining ESD:

> *ESD is a lifelong learning process and an integral part of quality education that enhances cognitive, social and emotional and behavioural dimensions of learning. It is holistic and transformational and encompasses learning content and outcomes, pedagogy and the learning environment itself. ESD is recognized as a key enabler of all SDGs and achieves its purpose by transforming society.* (UNESCO, 2020, p. 14).

These learning dimensions are associated with an 'education for the head-heart-hands' (Jagannathan et al., 2018; Orr, 1992; Singleton, 2015; Sipos et al., 2008), which is central to the achievement of the 2030 Agenda (Figure 1).

Figure 1. The three dimensions of learning in the ESD for 2030

Source: UNESCO, 2020, p. 17.
Roadmap:(i) Cognitive learning dimension ("head"), (ii) social and emotional learning dimension ("heart"), (iii) behavioural learning dimension ("hands")

The European's Union competence framework 'GreenComp' was developed through a participatory process involving sustainability educators and experts, and seeks to guide educational practices for implementing the European New Green Deal (Bianchi et al., 2022). GreenComp can also be regarded as being aligned with a transformative approach to learning, as the proposed competences focus on a sustainability mindset that integrates values and attitudes such as empathy, responsibility, and care for our planet ("heart") into knowledge ("head") and skills ("hands") development for sustainability (ibid.)(Figure 2).

Figure 2. The GreenComp Framework – the EU's reference framework for sustainability competences, which comprises four areas of focus: (i) embodying sustainability values; (ii) embracing complexity in sustainability; (iii) envisioning sustainable futures; and (iv) acting for sustainability

Source: (Bianchi et al., 2022, p. 3).

The ESD for 2030 roadmap and the GreenComp Framework constitute the best currently accepted guidelines for high-level policy (UNESCO / EU). Together, they hold great potential to shape the future of LfS.

2. Synergies between well-being and Learning for Sustainability

To identify synergies between the concepts of well-being and LfS, a relational approach to sustainability has been adopted. Such an approach emphasises the interconnectedness of socio-ecological systems, and calls for a more relational – rather than technocratic – paradigm, in which the intrinsic relationships between the system elements and their effects on the system are considered as a whole (Helne & Hirvilammi, 2015; O'Brien, 2016; Walsh et al., 2021). In other words, in a relational paradigm, "the dependency of human well-being on the health of ecosystems is internalized" (Helne & Hirvilammi, 2015, p. 167). Terms and concepts similar to this include the ecological paradigm or systems approach, and constructive postmodernism (Walsh et al., 2021). With their relational conceptualisation of well-being, Helne & Hirvilammi (2015, p. 168) underline the "urgent need for policy solutions that promote wellbeing – and not primarily economic growth – while simultaneously decreasing human pressure on the biosphere". Even though research into sustainability and well-being share similar goals, as stated above, scholars criticise the fact that the current "hedonic and eudaemonic approaches and accompanying measures are demonstrated to be isolated, investigating well-being individualistically and in a decontextualized manner" (Kjell, 2011, p. 255), and that they thereby reflect the individualistic and independent values of Western cultures (ibid.). Taking into account the urgent need for transformation and the justified criticism by these scholars of a rather technocratic paradigm, the relational approach appears to be the most promising one to advance perspectives on sustainable well-being (SusWB)[2] and to reflect upon the synergies with learning for sustainability. This is because the relational approach connects with the holistic understanding of UNESCO's ESD roadmap and the EU's GreenComp. Furthermore, relevant aspects such as intra- and intergenerational justice, as well as individual and collective responsibilities from both a short- and a long-term perspective, are fully acknowledged in this relational understanding.

[2] SusWB (rather than SWB) was chosen as an abbreviation for 'sustainable well-being' , because SWB is generally used to refer to 'subjective well-being' in most research literature on well-being.

2.1 Four proposed fields of synergies

O'Brien (2016) offers a definition for sustainable happiness – namely, "a happiness that contributes to individual, community and/or global well-being without exploiting other people, the environment or future generations". This notion acknowledges what other researchers have expressed as "one person's happiness can be another person's unhappiness" (Lazarus, 2003, p. 98). For this reason, Kjell (2011) advocates for the placing of well-being within the sphere of sustainability. This enables sufficient account to be taken of interdependencies, in order to accommodate the causes, consequences and dynamics of a holistic, interdependent form of well-being that he calls "sustainable well-being" (ibid). Inspired by Kjell's work and that of Helne & Hirvilammi (2015), O'Brien (2016), McLellan et al. (2022), the synergies I propose in this paper underline that the relationship of humans with the natural world should be framed as one of reciprocity and symbiosis, and that "well-being depends on the quality of the interaction with the social and the natural world" (Helne and Hirvilammi, 2015, p. 172).

Starting from the holistic understanding of education presented above, LfS therefore holds tremendous potential to shape these interactions in an inclusive, just and long-lasting way for all, on three levels: (i) individual sustainable well-being (ii); collective sustainable well-being; and (iii) planetary sustainable well-being.

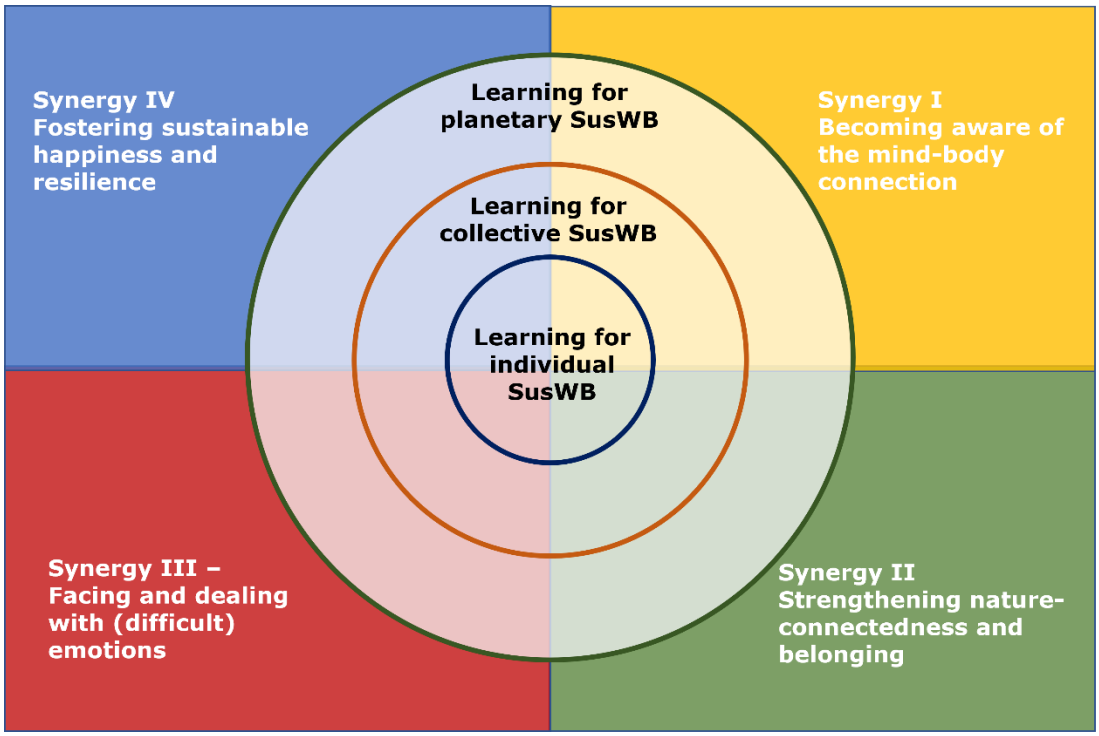
When comparing the five key areas of the Geneva Charter for Well-being and the four competence areas of the EU's GreenComp, we can see that both strive for:

- The flourishing and thriving of humans within planetary boundaries;
- A focus on the common good;
- Social and ecological justice as a matter of a good life for all;
- Sustainability values and the preservation of the planet through embodying and living these values.

Having these goals in common, we can ask: what are the shared concerns or dimensions of action that can achieve these goals, and how can we advance SusWB and LfS? Considering the literature on both concepts, I propose four fields of synergies (Figure 3):

- Synergy I – Becoming aware of the mind-body connection: holistic approaches to health and learning;
- Synergy II – Strengthening nature-connectedness and being part of the whole (i.e. feeling a part of nature, and having a sense of belonging);
- Synergy III – Facing and dealing with (difficult) emotions: coping strategies for stress, competition, injustice but also eco-anxiety, catastrophes, wars, among others;
- Synergy IV – Fostering happiness and resilience: becoming resilient, engaged citizens and active agents for change (i.e. stepping into our full potential).

Figure 3. Synergies between well-being and Learning for Sustainability mapped as a holistic approach to learning for sustainable well-being (SusWB) on an individual, collective and planetary level



Source: author's own elaboration.

The nested diagram presented in Figure 3 builds on the nested diagram of sustainability[3] (Giddings et al., 2002; Mebratu, 1998), and identifies the individual, collective and planetary level of SusWB as interconnected, underlining that the synergies identified can refer to all levels.

The four fields of synergies are explained in further detail in the sections that follow.

2.2. Synergy I – Becoming aware of the mind-body connection: holistic approaches to health and learning

Many studies – both empirical and philosophical, and from diverse disciplines – have demonstrated the interconnectedness of our physical and emotional states of well-being, which some scholars have called the "mind-heart-body connection" (Levine et al., 2021).

As stated above, in the field of ESD / EfS, scholars and practitioners advocate for a "head–heart–hands" approach (Jagannathan et al., 2018; Orr, 1992; Singleton, 2015; Sipos et al., 2008), with the aim of holistically integrating our minds and bodies into our learning design and processes. Nathan (2022) offers a useful overview of embodied learning and how to better integrate it into our education systems. While at the levels of pre-school and primary school, physical activities may still receive some more attention and the body is incorporated into the learning, this attention diminishes as educational levels get higher (Nathan, 2022; O'Toole & Simovska, 2022). In secondary and higher education, the focus is on stimulating cognitive and rational approaches, with the body rarely being seen as a

[3] The nested diagram of sustainability represents the three systems (environment–society–economy) as subsystems of one another that cannot be separated, and which are defined by the limits of the carrying capacity of the Earth. This diagram is widely used in systems thinking research as an alternative to the three overlapping circles or pillars of sustainability (ibid).

source of information and knowledge (Heras & Tàbara, 2014; Lau, 2009; Lehtonen, 2012; Levine et al., 2021).
Research shows that the capacities for concentration and focus improve when the body is integrated into learning activities, thus increasing overall well-being (Hrach, 2021; McLellan et al., 2022; O'Toole & Simovska, 2022; Ratey, 2008). Such integration can be achieved through, for example, mindfulness, physical activities, movement, being outdoors, and paying attention to all of one's senses (Heras & Tàbara, 2014; Lau, 2009; Lehtonen, 2012; Shrivastava, 2010; Wamsler & Brink, 2018). Furthermore, becoming aware of the mind-body connection is also linked to greater awareness and pro-environmental behaviour in general (Jagannathan et al., 2018; Netherwood et al., 2006; Orr, 1992). Since emotions play a crucial role in learning, educators can purposefully opt for approaches and pedagogies that ignite emotional reactions and help learners to connect with these, thereby creating opportunities for reflection and deep, transformative learning (Martiskainen & Sovacool, 2021; Tillmanns, 2020).

Major obstacles to this include the fact that many classrooms do not allow for physical and social interactions due to immovable furniture or other structural barriers. In addition, with regard to tests and exams, traditional school test settings impede children's ability to move their bodies in ways that would allow them to better think and interact with objects or people (Nathan, 2022). Teachers' professional development has not prepared them to address the mind-body connection, and scholars call for the integration of holistic and embodied approaches into the curriculum for future teachers, in order to improve overall well-being and learning (O'Brien, 2013). Due to the impacts of climate change, the mind-body connection is also a relevant consideration when designing the learning environment. Due to rises in temperature and the increased frequency of heat waves or similar extremes of weather, conditions such as air quality in classrooms or outdoor playgrounds that can absorb heat are important aspects to consider when aiming for the well-being of students and staff (European Trade Union Committee for Education, 2022; Pfautsch et al., 2022; Pfautsch & Wujeska-Klause, 2021).

As summarised by Nathan (2022, p. 17), "the brain, mind, body and environment together constitute an integrated system for learning, communication and intellectual performance". This perspective leads on to the next synergy about nature-connectedness and a sense of belonging.

2.3 Synergy II – Strengthening nature-connectedness and belonging

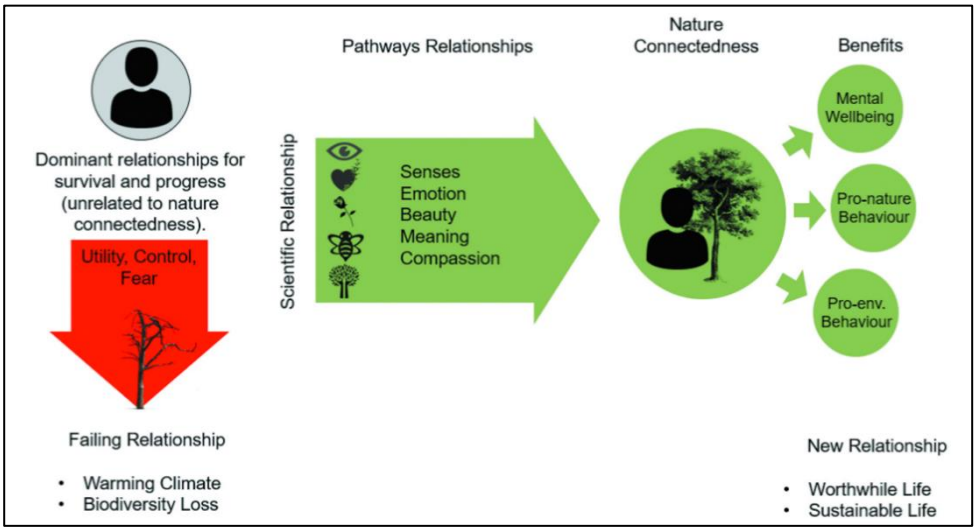
Nature-connectedness is seen as one of the main drivers for enhancing well-being and pro-environmental behaviour (Lumber et al., 2017; Martin et al., 2020; Pritchard et al., 2020; Richardson et al., 2020), whereas the lack of a feeling of connection to nature and not having a sense of belonging or feeling part of the greater whole is seen as one of the main causes for the current paradigm of unsustainability (ibid).

Nature-connectedness refers to an individual's relationship with nature (Mayer & Frantz, 2004), and implies "how we think about nature, our affective relationship with nature and the extent to which we see ourselves as part of nature" (Richardson et al., 2020, p. 388). Due to its manifold positive implications for health, capacities for attention and focus, positive emotions and reflective thinking (Mayer et al., 2009), attempts have been made to declare nature-connectedness a basic psychological need (Baxter & Pelletier, 2019; Hurly & Walker, 2019).

There are several specific measures of nature connection designed for children and adolescents (Chawla, 2020). The nature-connectedness of school-aged children has

declined over the past three decades, and is lowest among adolescents (Price et al., 2022). Diverse individual and contextual factors must be considered when dealing with the reasons for this decline, but research shows that the school environment plays an important role in enhancing (or impeding) nature-connectedness (ibid). While being outdoors is important and beneficial, providing access to nature alone is not enough to build a closer relationship with nature. Scholars encourage a mix of activities and approaches that include mind and body through (i) sensory contact; (ii) noticing beauty; (iii) emotions; and (iv) the making of meaning; as well as (v) compassion, calling them "pathways to nature connectedness" (Lumber et al., 2017; Richardson et al., 2020). Stimulating nature-connectedness in this way would allow a turn away from the current survival- or progress-oriented relationships that humans have with nature, which are based on utility, control and fear. Instead, nature-connectedness would foster an affective relationship with the positive outcomes mentioned previously, such as well-being, pro-environmental behaviour and a caring attitude towards nature preservation and conservation (Figure 4). Richardson et al. (2020) suggest designing educational curricula using the above framework, which can be adapted from pre-school to higher education.

Figure 4. The pathways to nature connectedness framework, illustrating failing and connected human-nature relationships and their outcomes



Source: Richardson et al., 2020.

Furthermore, nature connection can help to foster a sense of belonging (Leavell et al., 2019) and create meaningful ties not only with people and community, but also with the natural world beyond humans (Helne & Hirvilammi, 2015). Such a sense of belonging is much-needed, as approximately one in three students do not feel a sense of belonging in their school (Organisation for Economic Cooperation and Development (OECD), 2019).

LfS aimed at increasing nature-connectedness and well-being can be enhanced through the built environment – in particular, through biophilic design and architecture (Determan et al., 2019; Watchman, DeKay, et al., 2022; Watchman, Demers, et al., 2022; Zhong et al., 2022). Biophilic design draws "attention to the emotional aspect of humans' needs for interactions with the natural environment in the built environment" (Zhong et al., 2022, p. 117), and thereby puts nature-connectedness at its heart. Due to its positive impact on cognitive development, as well as its many benefits in terms of learning and overall well-being, such as improved classroom engagement, biophilic design is also applied in schools at various levels (Browning & Ryan, 2020; Heath, 2015). The Paul Chevallier public pre- and primary school complex in Rillieux-la-Pape (Lyon, France) is an inspiring example of a biophilic learning environment (see Section 3).

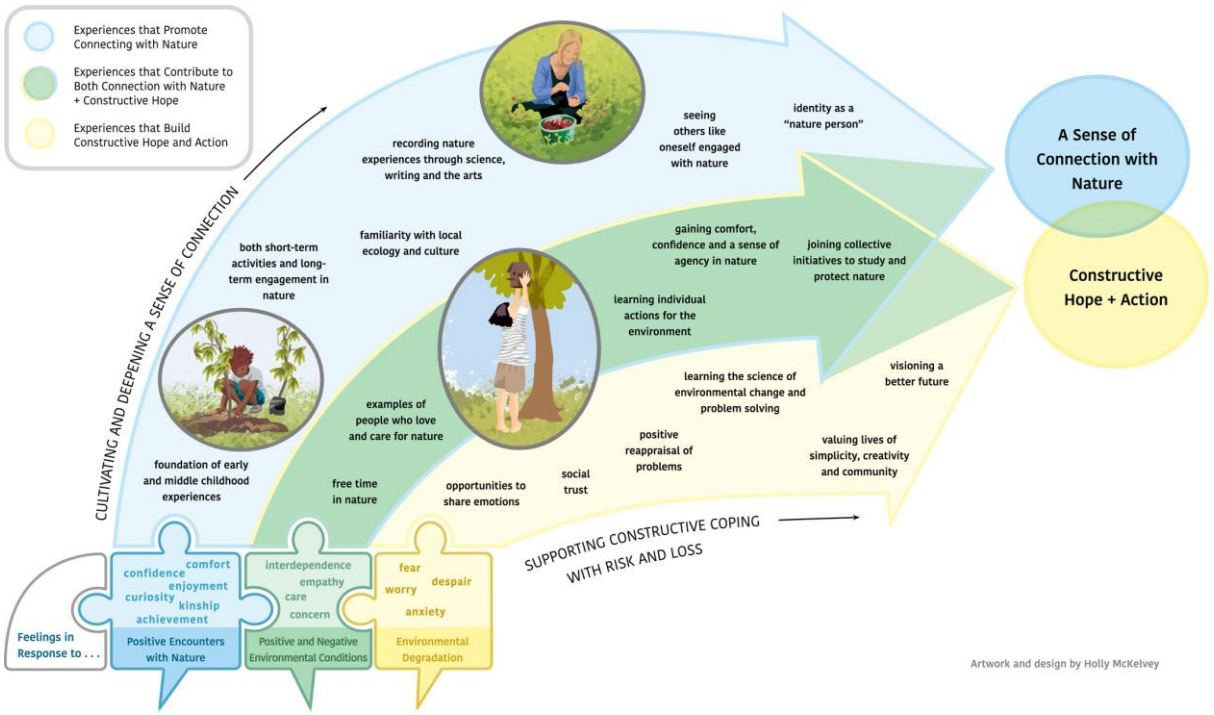
2.4 Synergy III – Facing and dealing with (difficult) emotions

With their focus on competitive performance, evaluation and comparison, schools and higher education institutions today place a great deal of pressure on pupils and students, causing fear and exhaustion even at early ages (McLellan et al., 2022; Pascoe et al., 2020).

In addition, the multiple crises of recent times such as the pandemic, wars, natural disasters and catastrophes, climate change and global injustices can place an extra weight on young people, who do not see a bright future ahead. Psychological distress concerning climate change and worsening environmental conditions – often referred to as 'eco-anxiety' or fear of environmental doom (Coffey et al., 2021) – can be increasingly observed among children, adolescents and young adults (Hickman et al., 2021; Léger-Goodes et al., 2022). This distress can be expressed in strong, mostly negative emotions, such as guilt, sadness, anger, despair and anxiety, which can become overwhelming (ibid) Pihkala (2022) developed a taxonomy of climate emotions. Scholars call for greater consideration to be given to eco-anxiety and related emotions, and propose that adjustments should be made to educational programmes, directed towards sustainability learning (Chawla, 2020; Pihkala, 2020; Wallace et al., 2020). Such adjustments could encompass the following (see also Figure 5 for practices that promote nature-connectedness and hope):

- creating more opportunities to express emotions (small group discussions, integrating art-based and place-based pedagogies, etc.),
- developing coping strategies, e.g. through mindfulness-related activities, being in nature, embodied experiences (see section 2.2),
- offering role models (e.g. people who love and care for nature, and who admit their personal emotional difficulties and how they deal with them).

Figure 5. Practices that help young people to connect with nature and cope constructively with environmental change"



Source: (Chawla, 2020, p. 635).

When supported constructively, as shown in Figure 5, emotions – both comforting and discomforting ones – hold the potential for deep learning to occur, to reflect upon personal values and worldviews, and "may lead to action and mobilization, empowering people to change their habits and help the planet" (Léger-Goodes et al., 2022, p. 3). Conversely, when such emotions are left unconsidered – in particular, strong and discomforting feelings such as those relating to eco-anxiety – this can lead to paralysis or even denial (ibid; Pihkala, 2020). Studies confirm a positive relationship of action competences and more hopeful visions of the future when emotions are addressed in the classroom, and are linked to agency (Finnegan, 2022; Sass et al., 2023).

In order that such emotions can be expressed, educators and the learning environment need to provide so-called "safe enough spaces" (Singer-Brodowski et al., 2022) in which pupils and students feel confident enough to open themselves up. These should be age-appropriate and targeted towards the specific needs of the respective target group. To design and create such safe enough spaces, educators must first carry out self-reflection and inner work by themselves, and how to do this should also be part of the curriculum for pre-service teachers (Pihkala, 2020; Singer-Brodowski et al., 2022). Further individual and institutional strategies are laid out by Wallace et al. (2020) and Pihkala (2020).

A growing number of educational institutions, from pre-school to higher education, offer mindfulness meditation or similar contemplative practices (Lau, 2009) to help learners become aware of their emotions without judgement, as well as enhancing self-regulation and developing coping skills for difficult emotions (Crescentini et al., 2016; Lau, 2009; Perry-Parrish et al., 2016; Rempel, 2012). While the effects of mindfulness are less well researched among children and young people than among adults (Burke, 2010; Crescentini et al., 2016), there is evidence of its positive effects at both individual and collective levels, enhancing the overall well-being of the participants. There are increasing calls for mindfulness to be integrated into social-emotional learning programmes (SEL) within the school curriculum (Felver et al., 2013). Various materials, such as the emotional resilience toolkit (Atkinson et al., n.d.) exist to support educators on this path.

Dealing constructively with emotions, developing coping strategies for discomforting feelings and strengthening emotional resilience at all educational levels, for both learners and educators, is of the utmost relevance in increasing overall well-being, providing a sense of hope and motivating students to step into their full potential, as laid out in the next section.

2.5 Synergy IV – Fostering happiness and resilience

Scholars view the concepts of well-being, resilience and sustainability as "the new trinity of governance" (Joseph & McGregor, 2020). Resilience refers to the capacity of a system to absorb disturbances; to evolve and adapt – while "the human element of resilience emphasises such things as reflexivity, awareness, innovative and enterprising behaviour and flexibility" (ibid. p. 39). With the aim of better integrating together resilience and sustainability learning, Sterling points out that both concepts nurture the 'resilient learner' (Sterling, 2010), who "is able to develop resilient social–ecological systems in the face of a future of threat, uncertainty and surprise" (ibid, p. 511). According to this author, combining resilience theory with LfS emphasises the importance of social learning as a form of higher-order learning, as well as of collective learning.

In this context, becoming resilient can therefore be understood as becoming engaged citizens and active agents for change who feel empowered to step into their full potential.

According to Aristotle, the ultimate goal in life is to lead a virtuous, happy life in which each individual can thrive to their full potential, find meaning and purpose that she/he can realise (Aristotle (translated by Crisp, R., 2014)). This understanding connects with Maslow's ideas of "self-actualisation", "being" and "becoming", and represents the highest satisfaction of needs. Self-actualisation refers to "full-humanness, wholeness of self and fulfilment of mission" (Maslow, 2011, p. 29 ff.), thereby implying altruism and ties to other people and society, seeing individual fulfilment as being dependent on a 'good society' (Helne & Hirvilammi, 2015). This connection between individual and social well-being also links to the relational approach to sustainability and the importance of focusing on the common good, as indicated in the 'ESD for 2030' roadmap and the GreenComp Framework, and supported by the results of the latest World Happiness Report (Helliwell et al., 2023a).

Bearing this in mind, competences which promote human-nature connection – see, for example, attitudes and skills under the GreenComp area "Embodying sustainability values" (Bianchi et al., 2022, p. 17) – can help to foster this interdependent understanding, and are suitable for promoting happiness and resilience. Policymakers, curriculum developers, architects, designers and educators are therefore invited to shape learning environments for pupils and students in such a way that they feel supported and empowered to become happy and resilient human beings, belonging to a broader learning community and willing to make changes for a more sustainable future.

3. Sustainable well-being schools and learning environments: selected inspiring examples

The five examples presented in this section were chosen because they exemplify one or more of the synergy areas described above. They do not correspond to any ranking or specific distinction criteria.

- **Example 1: "*Klimaatspeelplaats* – Climate Playground at the Sint-Paulus city school** (Belgium) (Klimaatspeelplaats, 2020)

Under the motto "play nature", this climate playground was created by a city school, transforming the previously concrete surface into a stimulating play and learning landscape in which a large number of play stimuli and biodiversity have found their place. In collaboration with parents, local residents and teachers at the school, 4,000m^2 of concrete were broken up and replaced with play mounds and small wilderness areas. Children were involved from the start of the project. This nature-rich playground predominantly relates to synergies I, II and IV.

Figure 6. Photographic impression of the climate playground.

Source: (Klimaatspeelplaats, 2023)

- **Example 2: Schools for Health in Europe and Central Asia (SHE)** https://www.schoolsforhealth.org/

With core values such as equity, sustainability, inclusion, empowerment and democracy, the SHE network promotes a six-step whole-school approach to improving the health of children and young people, focusing on schools. The network's platform offers diverse learning materials and an academy for professional development. Overall, SHE relates to Synergies I and IV, and is of high relevance to the updating of teacher training and offering continuous professional development to educators to enhance well-being and LfS in schools.

Figure 7. Logo of SHE

S·H·E
Schools for Health in Europe

Source: SHE website

- **Example 3: MindSerena – Mindfulness training for teachers and pupils from primary schools in Portugal**
  https://mindserena.org/

MindSerena is a social-emotional learning (SEL) programme for pupils from grades 5 to 9 (6-15 years old) as well as teachers in Portugal. MindSerena promotes the self-regulation of attention and emotions, social interaction, and nature-connectedness. School teachers take part in an eight-weeks training programme and three in-class workshops, facilitated by certified mindfulness teachers from MindSerena. Pupils attend mindfulness sessions in class for eight weeks, held by MindSerena teachers. They are also encouraged to practice at home and use the materials and tools available at MindSerena's website, such as short, guided meditations in audio and video formats. The project is based at the Faculty of Psychology and Education at the University of Coimbra. The activities promoted relate to all of the synergies described above.

Figure 8. Logo of MindSerena

Source: MindSerena website

- **Example 4: School complex Paul Chevallier in Rillieux-la-Pape (Lyon, France)**: public nursery and primary school based on biophilic design (Ghaziani et al., 2021)

This school complex[4] is based on biophilic design, and embodies the relationship between architecture and nature. The buildings are mostly made of wood, and their roofs are carpeted with plants. Walkways allow children to explore. There is also a school garden. The interiors include spacious corridors and use floor-to-ceiling windows to increase natural light. Such a learning environment relates mainly to synergies I, II and IV.

Figure 9. Photographs of the Paul Chevallier school complex (Google images)

Source: Google images.

[4] See here in this YouTube video: https://www.youtube.com/watch?v=c7jTUeJbd4s&ab_channel=FiboisAuvergne-Rh%C3%B4ne-Alpes (Fibois Auvergne-Rhône-Alpes, 2014)

- **Example 5: Now! From anxiety to young people's environmental political agency, Tampere University, Finland**
  https://projects.tuni.fi/nyt/in-english/

The NOW! Project[5], is a Finnish project on the emotional resilience of young people aged 12-16. The aim of the research project is to channel the environmental anxiety of young people into well-being through environmental-political agency. The project runs at Tampere University (Tampere, Finland) from 2020 to 2023, and is funded by the Kone Foundation. Its multidisciplinary action research examines the relationship between adventurous nature experiences and young people's desire and capacity to act for the environment, and the importance that such actions have for them and for society at large. This project relates most closely to Synergies II and IV, but also addresses the remaining synergies.

Figure 10. Screenshot of Now! Logo

Source: (Tampere University – Youth Studies, 2022)

[5] See here in this YouTube video:
https://www.youtube.com/watch?v=DPrfeejWce4&ab_channel=NYT%21Nuoretjaymp%C3%A4rist%C3%B6
(Tampere University – Youth Studies, 2022)

4. Future research and concluding remarks

As outlined in this paper, sustainability and well-being can be seen as "twin concepts, and a sustainable world as one where 'the Earth thrives and people can pursue flourishing lives" (Bandarage, 2013, p. 3, in Helne & Hirvilammi, 2015, p. 169). Learning for sustainability, understood as a holistic educational approach. can provide meaningful pathways to such thriving and flourishing, but the field of research into well-being in schools is still relatively young, and requires further cross-cultural and cross-disciplinary research (McLellan et al., 2022). Similarly, Walsh et al. (2021) suggest co-developing research agendas in the field of relational sustainability and education – through which, for example, the fields of the synergies presented in this paper could be deepened. Adler et al. (2016) recommend that policymakers should better anchor the teaching of those tools required for well-being in schools (among other environments). However, as O'Toole and Simovska warn:

> *One problem is that most contemporary theorising in the area of wellbeing draws heavily on traditional, monological and reductionist theories, which view the self as autonomous, self-contained and separable from the social and material world. This type of theorising inevitably leads to individualistic and de-contextualised wellbeing interventions in schools. A second problem is that the current wellbeing agenda in schools largely precludes consideration of the goals, purposes and transformative potential of education itself*. (O'Toole & Simovska, 2022, p. 21).

Learning for Sustainability should therefore remain critical and self-reflective, in order to overcome instrumental and individualistic approaches to education and advance sustainable well-being from a systems perspective. When approached from such a systems perspective, LfS can help to make learning more meaningful and engaging, as it fosters collaboration and connection with the community. Such learning implies positive impacts on learners' well-being and happiness, which can in turn contribute to pro-environmental behaviour and awareness, as well as increased motivation for learning and better attendance at school. Pre-service teachers and educators, as well as in-service teaching staff, need to be able to learn – either as part of the pre-service curriculum, or through continuous professional development –how to integrate holistic pedagogies into their teaching. In doing so, they can become better prepared to address, for example, (difficult) emotions, or to promote learning in and with nature. Particular attention should be given to promoting nature-connectedness and embodied learning in schools, as these fields provide multiple benefits for well-being, learning and pro-environmental behaviour. In this sense, Price et al. suggest "Tackling inequalities in access to nature young people is a first step to effect considerable change in levels of nature connectedness" (Price et al., 2022, p. 10), together with more longitudinal and controlled studies to evaluate nature-connectedness resulting from carefully designed interventions (ibid). Furthermore, research into young people's connection with nature, action for nature and constructive hope should be extended beyond Western cultures and should include the needs of diverse countries and cultures, especially in those regions with the highest population growth, such as Asia, Africa and Latin America (Chawla, 2020).

Lastly, McLellan et al. (2022) underline that one size does not fit all, and that close attention should be paid towards social and cultural factors, norms, beliefs and practices when attempting to transfer apparently successful practices into a new context.

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