

Chapter # 21

THE PERFECT MATCH FOR EDUCATION FOR SUSTAINABLE DEVELOPMENT: HUMAN NEEDS VERSUS SUSTAINABLE ALTRUISM?

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ABSTRACT

Altruistically speaking, humanity has now reached a point where it has recognized that it has a responsibility to achieve a development that is sustainable, to wit the United Nations Sustainable Development Goals (SDGs). This notwithstanding, as an intrinsically selfish creature, humanity also has a need to fulfil its own needs. This concept is set out by Maslow. Education is undeniably a linchpin in marrying these two concepts, aiming to meet the challenges and the needs of both today's and future generations. Whether and how these needs are met for any learner affects the learner's motivation to learn and the educator's motivation to teach. Therefore, it is paramount to reflect on the type of education that best "cultivates and guides the sustainable humanity" of the learners. This is the challenge facing today's Anthropocene society. Hence, this conceptual chapter attempts to distil a number of tangibles from the marriage of the SDGs with Maslow's hierarchy of human needs. One of the concrete outcomes is a series of features which aim to frame any realignment and transformation process for education for sustainable development (ESD). Finally, this chapter should fuel research and steer governance.

Keywords: educational guidance, transformative learning, human needs, Maslow, paradigm shift, Sustainable Development Goals

1. INTRODUCTION

Our world is continually progressing, and we must endeavor to re-adjust it towards a path that is sustainable. This entails a new way of doing things that nurtures our environment while at the same time ensuring justice, social equality and economic stability. This progress, however, is impossible without education, just as education should always be geared to progress. Logically, therefore, the concept of sustainability must be critical in any educational transformation. With this chapter we expand on the work of numerous writers, such as Maslow (1943, 1971, 1987); Papalia and Olds (1989); Berger (2000); Bee and Boyd (2006); United Nations (2017); Kioupi and Voulvoulis (2019); Quendler, Lamb, and Driouech (2020); UNESCO (2021). The aim is to synthesize their perspectives and develop sensible approaches in this area. Any approach must be based on the vision of a just and equitable future for the next generations on a stable and resilient planet. With this in mind, we, first, describe the status quo of current education and then identify the unique challenges for a paradigm shift towards an education for sustainable development. Then we outline the necessity for a certain education in today's society and identify the unique challenges that education faces – in particular with regard to its alignment with the United

Nations Sustainable Development Goals (SDGs), as well as Maslow's human needs. Subsequently, one of the principle outcomes of this contribution is a series of eight features which could be used as a template for any realignment of education aiming to achieve sustainable development at the same time as fulfilling Maslow's needs. Finally, further research may build upon these conclusions so that researchers are spurred to examine the topic in more detail in future practical work. Moreover, these findings will clarify the needs of learners within a sustainable context and identify where action for continuous information and awareness-raising, networking, and research activities as well as political governance has to be taken.

2. BACKGROUND: EDUCATION IS THE WAY TO GO

We live in a world of manifold, complex relationships within a knowledge society, and at a time where technological developments are continually imposing "game changes" with hitherto unimageable rapidity. Everything is in a constant state of flux leading to additional challenges coming up daily. As said, education plays a crucial role in addressing any challenges. Nevertheless, the former is itself also subject to a paradigm shift, as described below.

2.1. Our World Today

The sustainability crisis, political crises, natural disasters, as well as health crises, are characteristic of the diverse and heterogeneous society of the twenty-first century. Economic, environmental, social, and cultural inequalities are all exacerbated as a result of these crises. Moreover, living in today's society could be described as belonging to a "nowist culture" and a "hurried culture" because we value brand-new, high-impact items over those that require exploration (Bertman, 1998). We propose that in order to address the Anthropocene's dilemma, education must be tailored to engender a sense of responsibility towards both the global and the local, an ethos of accountability and humanity at the same time as enabling all individuals to achieve their full potential. This is in line with aiming at a development that is sustainable, as described by the SDGs (United Nations, 2015), as well as meeting individual human needs, as defined by Maslow (1943). Both are part of transformative sustainable learning paths in a digital era (cf. Quendler, Lamb, & Driouech, 2020).

2.2. Our Education Today

Education, at its core, is about preparing learners to be active, successful, and contributing members of society. Conventionally, education has been understood as preparation for life, as personal realization, and as an important component of progress and social, academic, cultural as well as intellectual development. Moreover, education is crucially important for many of the policy outcomes that citizens and politicians care about (Burgess, 2016). At an individual level, education affects earnings, employability, and chance of succeeding in life, especially for those having started under disadvantaged conditions. It, therefore, also plays a key role in building a construct with helps people fulfil their own individual needs in a way that displays responsibility to the environment in the broadest sense. Despite this, a number of authors (Chomsky, 2002; Legendre, 2002; Marcotte, 2006; Morin, 2000; United Nations, 2017) claim that the current educational system is not suited to a human being's natural development. Moreover, education systems globally, and at all levels, have faced a variety of different challenges over the past couple of years. For instance, the pandemic caused a global learning crisis; technologies have changed and still are changing learning, teaching, and assessment; and the costs continue to

rise to levels that are unsustainable for some learners. This appears to be due to the difficulty in defining the primary functions of each degree of education in society (cf. Legendre, 2002). This necessitates greater clarity in the goals (why) and methods (how) of "education." (Giordan, 2002). On the one hand, the education system has seen the rise in the current «one-size-fits-all» approach that «teaches to the best» (cf. Jennings, Swidler and Koliba, 2005; Guidote, 2020). This is driven by factors such as economic productivity, the demand for measurable outcomes and formal accountability (Dulfer, Polesel, & Rice, 2012; McInerney, Smyth, & Down, 2011). On the other hand, there is growing international recognition of education as a key enabler for sustainable development. For instance, the International Commission on Education for the Twenty-first Century highlighted the importance of education in supporting human development (cf. Delors, 1996, p. 11); others are Environmental Education (EPA, 2021); Education for Sustainable Development (cf. United Nations, 2017; UNESCO, 2021), Sustainable Transformation through education (cf. Kioupi, & Voulvoulis, 2019); Friday for Future. These examples, as described by McInerney et al. (2011), respond to long-term demands for sustainable development, and planetary boundaries in facing the challenges of globalization, environmental issues, social exclusion, capitalism, and economic exploitation affecting local communities. Although each local community is characterized by its beliefs and culture, people may now be educated and exchange knowledge in new and fascinating ways thanks to modern technology. This leads to the more rapid blending of traditions and change in belief systems brought about by online experiences and interests rather than being taught in any local classroom. In this way, we communicate our beliefs and cultures without expecting our audience to adopt them, only to accept them.

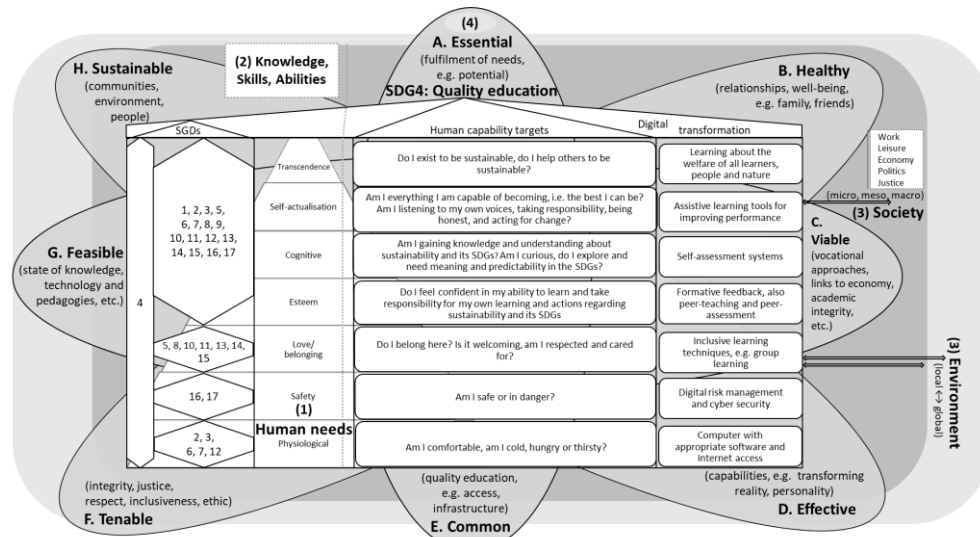
2.3. The Multi-level Paradigm Shift

The paradigm shift toward viewing the world in less economic and more sustainable terms is challenging the traditional way we think about education. Education for sustainable development (ESD) has evolved as a paradigm from today's challenges. Such an alignment of education aims to encourage learners in their interchange of knowledge to build values, attitudes and skills in order to act sustainably. Actually, what is meant here is to teach learners to behave in a way that meets their needs while respecting cultural diversity and the earth. (United Nations, 2017; UNESCO, 2021) Furthermore, whether and how these needs are met for any learner has an impact on both the learner's motivation to learn and the educator's motivation to teach. In this regard, it goes without saying that Maslow's hierarchy can be used to improve the quality of education (cf. SDG 4, FAO, 2022) as a function of motivation – despite the critics who say that needs do not follow a hierarchy (cf. Wahba & Bridwell, 1976). Nonetheless, when all levels of Maslow's hierarchy of needs are met, learners can show their full ability and enthusiasm to learn and act in a sustainable way. Rethinking education in this sense entails reshaping it around components that actually put the learner at the heart of the system, i.e. humanistic-centered education. A vast number of authors have emphasized this orientation (cf. Chomsky, 2002; Marcotte, 2006; Maslow, 1987; Morin, 2000; Piaget, 1983). On this track, we must think even further, prioritizing the multi-dimensional development of the learner in a multi-dimensional world in order to make him or her an autonomous person. Such a person is capable of becoming the best version of themselves by making fully conscious decisions for himself or herself (cf. Parmentier, 2002), rather than focusing merely on becoming a functional citizen, well-integrated in the economic and political system of society within a given environment. Current knowledge of the requirements for the proper development and functioning of a human being makes it possible today to redefine approaches for rethinking our education systems.

3. UNDERSTANDING THE BIG PICTURE

It is no longer a surprise that learners seek more from education than just a means to a safe place to work and an appropriate paycheck. Satisfying learners’ needs (cf. Brundtland report, United Nations, 2017) means scrutinizing the conventional wisdom around value proposition, diversity, inclusion, learners’ experience, learning and teaching models, and delivery channels across the entire educational landscape in relation to Maslow’s human needs (Maslow, 1943, 1987). Conversely, ESD also means to mainstream sustainability at all levels. This is also indicated by SDG Target 4.7 (United Nations, 2017, p. 48). Figure 1 exemplifies the synthesis.

Figure 1.
Synthesis of Maslow’s hierarchy of needs and the UN SDGs under educational context.



Source: adapted from Quendler, Lamb and Driouech (2020)

The fulfillment of their needs will shape how, what, when, and why learners will learn something. Each level, once met, imparts the ability and enhances the motivation to learn. Preferably, the learning environment should meet as many of the individuals needs as well as SDGs as possible. In the sense of Maslow, every learner is capable and theoretically desires to move toward a level of transcendence. A learner who has “self-transcendent” values is more likely to engage in sustainable behavior (Stern, 2000), show higher concern for environmental risks (Slimak, & Dietz, 2006), is more likely to perform specific actions such as recycling (Dunlap, Grieneeks, & Rokeach, 1983) or support climate mitigation policies (Nilsson, von Borgstede, & Biel, 2004).

Each learner is capable and can move from need to need or SDG to SDG by gaining understanding and experience with the proper support (McLeod, 2023), cf. capability targets. It is a natural phase of personal development, which occurs during every transition in meeting human needs and SDGs. This is also expressed by the theory of “transformative sustainable learning” (see Mezirow, & Taylor, 2011).

The needs combined with the SDGs show different incentives for learners and teachers as to why they want to learn and how this is capable of contributing to a life of dignity in a sustainable future. If their fundamental needs as humans are not fulfilled, the

learners might act irresponsibly. Learners need to be empowered to understand and shape the emerging challenges seeing them as concurrent to their own needs. Based on the SDGs (United Nations, 2017) and adapted Maslow's hierarchy of needs (Maslow, 1943, 1987) education and its training programs should enable each learner to achieve greater fulfilment of his or her potential under the auspices of sustainable development. This confirms the actual trend of changes in the production/development and in the consumption/use of information and knowledge. On that the role of learners is enhanced through a new form of collaboration, in which the learner is both a "producer of knowledge" and a service provider of applied knowledge (Driouech, Sisto, Lorusso, & Raeli, 2015, p. 239) in the form of being capable of acting sustainably. Following this the knowledge and capability gaps related to sustainability both in the individual and collective learning processes can be mastered in order to implement change successfully, as argued by Hubers (2020).

Figure 1 portrays the overlay of Maslow's hierarchy of needs with the SDGs and the subsequent distillation of eight features. It also gives capability targets in the form of questions which easily transform to a set of learning outcomes (check list) in an educational context. Moreover, any such system should also include appropriate didactics and technological gadgets, media and tools – some guidance is given by transformative pedagogy see table 1 and 2.

*Table 1.
Curriculum transformation and transformative pedagogy.*

Example/Description
Curriculum transformation
Sustainability issues and initiatives are driving change in education as emphasised by Wright, Cain, and Monsour (2015). Curricular reform is occurring in many ways, but few achieve transformative curricula by considering the SDGs and Maslow's needs in teaching efforts and learning outcomes. Such a curriculum also involves a process that asks faculty members to take a critical stance on the interest and activities aligned to the SDGS as well as the hierarchies and individualities within the classroom. Furthermore, they should interweave multiple perspectives and integrate student voices and knowledge into the learning process. This process emphasizes the power of engaging in critical reflection and authentic experience, as done by the University of Washington (2017).
Transformative Pedagogy
The conceptual framework for transformative pedagogy is based on autonomous teaching and learning. In addition, it argues for more systematic links to be developed between knowledge acquired at school/high school/university and knowledge gleaned by interacting in the context of wider society. Such a pedagogy supports teachers and students developing their identity as whole persons with relationships based on interdependence and moral values, i.e. teachers and learner, as "beings-in-relation" as well as "beings-in-becoming." Not only do teachers and students develop the capacity to express their meanings in the given context but learn to critique and shape their world. The process suggests that personal and social transformations depend on autonomy and that autonomy depends on morality. On that, there is a need for a more person-centred approach and for bringing school/high school/university life and wider community life into a more dynamic and fruitful alliance. The following examples in table 2 describe practical methods for teaching and learning in the case of transformative pedagogy. (Farren, 2016).

Source: own elaboration.

Table 2.
Select educational practices with a special focus on the SDGs.

Example/Description
Learning Café
The SDGs Café is a meeting of stakeholders to discuss (inter)national developments regarding the SDGs. This café covers a whole series of topics. Examples are given by the Netherland and Japan. The café is a space for in-depth exchange, see United Nations University (2016); SDG Café (2020).
ClimateCafé is a field education concept involving different fields of science and practice for capacity building in climate change adaptation. Lessons learned from this café will improve capacity building on climate change adaptation in the future, see Boogaard et al. (2020).
Eco Café is a place to explore how we can use education to nurture the values and ethical principles required in the transition to sustainable living and for building a peaceful global society. This café is a space for serious discussion, making sure everyone who wants to speak can do so, see Education for the Sustainable Development Goals at DMU (2023).
Participatory innovation process
In the hackathon , students with a background in natural science, social science, problem solving coding, designing, and app developing will provide (digital) new solutions to issues related to SDGs corporate, entertainment and gaming or new business ideas. Examples are OSS4SDG Hackathon (United Nations, n.d.), Digital Education Hackathon: Digital education for a sustainable world (Global MOOC and Online Education Alliance, 2023), SustHack (Sunway University, n.d.) or EDU-HACK (Global Opportunities, 2023). Hackathon attendees get the opportunity to network with some of the most forward-thinking students and academics from around the world, gain new perspectives and be inspired by people from all walks of life. Moreover, there is no better way to learn new technical skills or train collaboration amongst other.
Problem- and project-based Learning, incl. case studies
In the European Virtual Seminar on Sustainable Development students from 12 universities in Europe work together in international, multidisciplinary teams within an online social network. The learning objectives are (1) that students gain an understanding of the concept of sustainable development and apply it to a case study in Europe, 2) that students learn to collaborate with students from other disciplines, countries, and culture, using internet technology, whereby the ultimate goal of the case study is to come up with evidence-based recommendations on the topic. The case study groups are responsible for their learning process: keeping the learning and research process going and delivering integrated group products on time. (de Kraker & Corvers, 2014).
Green Flag projects are running in Sweden from pre-school through high school. Each school convenes its own environmental committee of teachers and students who develop at least five goals for the theme chosen [(1) climate and energy, (2) consumption, (3) cycles in the natural world, (4) lifestyle and health, (5) water resources, and (6) local environment]. From the goals, the committee sets activities and documentation measures. Green Flag projects must last at least 6 months. Upon completion, the schools collect the documentation and submit a report. The mission of Green Flag is that students develop the ability, through critical thinking, to take responsibility and an active role in sustainable development. (Cars & West, 2015).
Testing SDGs knowledge
The Sulitest tests the SDG knowledge. It is the world's first assessment tool for sustainable development and corporate social responsibility. Students are able to check on their SDGs knowledge. (SDSN YOUTH, n.d.).

Source: own elaboration.

For the sake of practical implementation, a series of eight prerequisite steps lead to the resulting outcome of eight features as identified in figure 1.

(1) Appreciate that the majority of learners, at all levels in their learning activities, are looking for more than just employability – that they would like to have their needs satisfied as well as the SDGs in the long-run.

(2) Recognize that learners' circumstances vary significantly in different learning activities and teams and are often very different from those of the teachers themselves.

(3) Analyze how effectively needs in connection with the SDGs are being met in each type of learning activity and each curriculum overall, benchmarking performance of peers and best practice.

(4) Identify how the different needs in connection with the SDGs can be better satisfied – typically through changes in educational ethos and culture, behaviors, and day-to-day learning practices.

(5) Act by creating initiatives, projects, and processes to help make learners feel more empowered, in their learning activities that are, as much as possible, more skills-based, autonomous, connected, interesting, or purposeful.

(6) Monitor and evaluate the results, both in terms of how satisfied learners, teachers and institutions are with the meeting of their needs in connection with the SDGs and in terms of commercial outcomes and personal well-being.

(7) Adjust the learning environment and architecture in order to address the needs and SDGs in an appropriate manner.

(8) Develop the curricula to anticipate implementation problems, not only concerning the learning and teaching techniques, objectives and outcomes but also, in collaboration with the many parties involved, regarding the overall transformation strategy.

4. PAVING THE WAY FOR EDUCATION FOR SUSTAINABLE DEVELOPMENT

Accordingly, education that is based on and for the SDGs as well as human needs implies the need for deep changes in educational values, assumptions, policy, and practice. It goes hand in hand with the renewed global commitment envisaged in the Education 2030 agenda. This may represent an opportunity to rethink the need for ESD in order to address the challenges arising from the changing education and policy landscape. For that we have to consider multiple worldviews and alternative knowledge systems, as well as new frontiers in science and technology such as advances in neurosciences and developments in modern technology. Moreover, a broader perspective should be adopted by shifting the focus to human needs, imagination, and activity in a wide-scale system of transformation (see Thomas, 2013, p. 172). When approached using the eight steps outlined above, figure 1 results in eight features which aim to assist in the implementation of any educational transformation.

(1) **Essential:** Is the fulfilment of needs part of a process of humanistic or human-centered education (Maslow, 1943, 1971, 1987)? Does education help a person to become the best human being possible according to his or her potential? How are the learner's needs fulfilled? How are the needs linked to sustainable development in an individual and collective sense? What is the role of needs in a transformative learning approach? (see Quendler, Lamb, & Driouech, 2020)

(2) **Sustainable:** Is sustainability integrated in any education system, both in terms of content and method? How are sustainability and the needs of the learners linked? Does sustainable digital modernization take place? Is the emphasis on the potential of SDG innovations to catalyze transformations to a more sustainable learning process of learners and corresponding working environments? (see Quendler, Lamb, & Driouech, 2020)

(3) **Healthy:** Does it embody and advocate healthy approaches to education (both learning and teaching), life, relationships, family and friends? Does education promote biological, mental, moral and social well-being? (see Fraiberg, 1967; Henderson, 1947; De Koninck, 2004)

(4) **Tenable:** Is it “ethically acceptable,” as Sterling (2008) puts it, “working with honesty, justice, respect, and inclusivity?” Are there a range of educational realities in light of the many different political, cultural, social, environmental and economic contexts throughout the world? (see Morin, 2000)

(5) **Feasible:** Does it deploy, promote and teach using the current state of knowledge, technology and pedagogies in a way that is practicable? Are substantial changes in the social networks of learners and in the development of practices, routines, preferences, and interests of various social learning groups instigated? Is the “how” of teaching and learning in the future already considered? (Quendler, Lamb, & Driouech, 2020; see European Union, 2016)

(6) **Viable:** Is the education system financially viable, meshing with the market, fostering employability on the one hand, while maintaining academic integrity on the other? Is the system financially self-sustaining or are there dependencies? Are the latter above reproach? Is education defined as a never-ending process? (Quendler, Lamb, & Driouech, 2020)

(7) **Effective:** Is an individual capable of achieving, depending on their particular circumstances, the various combinations of what he or she can do or be (see Sen, 1992, p. 38–34)? Are capabilities conceived as temporary, changeable outcomes of evolving long-term co-evolutionary processes? (see Quendler, Lamb, & Driouech, 2020; Toner, 2011) Does education multiply the human being’s ability to know and transform reality? Are learners capable of reasoning and evolving in their process of consciousness (see De Koninck, 2004)?

(8) **Common:** Does everyone have access to quality education guaranteed by a minimum of infrastructure? How can we ensure that ESD is a common good but individualism is guaranteed? Is ESD as a common good a valuable complementary concept for the governance of education in a changing environment? How can the public interest and societal/collective development in contrast to an individualistic perspective be preserved?

5. AN INCLUSIVE FIELD OF RESEARCH

Taking the long-term empowerment of learners through education – as outlined in this conceptual chapter, the implementation of such a paradigm shift goes hand in hand with further applied research as follows.

(i) A thematic section should aim to spell out a specific research agenda for such an approach considering the steps for implementation as well as the features by also uncovering existing research trajectories. This section would also outline how it might contribute to the quality of teaching and learning and transformation in general.

(ii) A case study section should collect best practice examples. This should look at whether good-practice examples illustrate an initial notion of the paradigm shift needed as well as highlight their innovation potential. Furthermore, a checklist together with an evaluation program for further implementation should be drawn up.

(iii) A training section should focus more on transformative pedagogy and technological needs in the form of training materials to foster any transition. The suitability issue of transformative pedagogy has to be more comprehensively discussed in the context

of curricular design, classroom structures, and compatibility with traditional teaching methods as well as modern technology applied.

(iv) A cooperation section should highlight the relevance of alliances between the different stakeholders based on a common vision. Moreover, it would point out the crucial role of the different forms of governance, especially the political one.

If we are truly interested in a transformation toward a more inclusive and sustainable future then we should consider the entire system of education. In this sense, education institutions may reimagine the future by designing and implementing strategies that improve learners' outcomes such as graduation rates and greater inclusion and responsibility, enhancing operational and administrative performance, and ensuring sustainability.

6. CONCLUSION

This conceptual chapter has outlined the theoretical framework and multifaceted foundations to match two concepts, namely the SDGs and Maslow's hierarchy of needs. Such an approach is based on thoughts that emerge from the "Zeitgeist" and is supported by literature. Moreover, it ensures that all young people, both now and in the future, have access to a sustainable and inclusive education by considering their individual needs as an intrinsic part of achieving the SDGs. In our view, however, practical implementation is still outstanding. The logical conclusion now is, therefore, action. This action taken to enable a shift in the educational paradigm should be facilitated by the marriage of Maslow and the SDGs. The steps and corresponding features distilled here, together with the future research outlined above should all lead to a realignment that is both altruistic and human. This should correlate with higher learning outcomes in line with Maslow's hierarchy and the SDGs, it should ensure a level of employability that is both modern and sustainable and finally it should strengthen a sense of responsibility and ownership among both learners and educators. Any such realignment should, furthermore, involve the continuous exchange of information, awareness-raising and networking in compliance with political governance.

REFERENCES

- Bee, H., & Boyd, D. (2006). *Lifespan Development* (4th ed.). Toronto: Pearson.
- Berger, K. S. (2000). *The Developing Person through the Life Span*. New York, NY: Worth Publishers.
- Bertman, S. (1998). *Hyperculture: The Human Cost of Speed*. Westport: Praeger.
- Boogaard, F. C., Venvik, G., Pedrosa de Lima, R. L., Cassanti, A.C., Roest, A. H., & Zuurman, A. (2020). ClimateCafé: An Interdisciplinary Educational Tool for Sustainable Climate Adaptation and Lessons Learned. *Sustainability*, 12(9), 3694. <https://doi.org/10.3390/su12093694>
- Burgess, S. (2016). *Human Capital and Education: The State of the Art in the Economics of Education* (IZA Discussion Paper No. 9885). Retrieved from <https://repec.iza.org/dp9885.pdf>
- Cars, M., & West, E. E. (2015). Education for sustainable society: attainments and good practices in Sweden during the United Nations Decade for Education for Sustainable Development (UNDESD). *Environment, Development and Sustainability*, 17, 1-21. Retrieved from <https://link.springer.com/article/10.1007/s10668-014-9537-6>
- Chomsky, N. (2002). *Chomsky on democracy and education*. Abingdon, England: Routledge.
- De Koninck, T. (2004). *Philosophie de l'éducation: essai sur le devenir humain [Philosophy of Education: Essay on Human Becoming]*. Paris, France: Presses universitaires de France

- de Kraker, J., & Corvers, R. J. M. (2014). European Virtual Seminar on Sustainable Development: international, multi-disciplinary learning in an online social network. In U. M. Azeiteiro, W. Leal Filho, & S. S. Caeiro (Eds.), *E-learning and Education for Sustainability* (pp. 117-136). Peter Lang Publishing. Environmental Education, Communication and Sustainability Vol. 35. <https://doi.org/10.3726/978-3-653-02460-9>
- Delors, J. (1996). *Education: The necessary utopia*. In J. Delors (Ed.), *Learning, the treasure within: Report to UNESCO of the international commission on education for the twenty-first century* (pp. 13–33). Paris, France: UNESCO.
- Driouech, N., Sisto, L., Lorusso, O., & Raeli, M. (2015). Alumni network and peer learning: experience of Mediterranean Agronomic Institute of Bari, *The Journal Agriculture and Forestry*, 61(1), 239-249. <https://doi.org/10.17707/agricultforest.61.1.31>
- Dulfer, N., Polesel, J., & Rice, S. (2012). *The experience of education: The impacts of high stakes testing on school students and their families: An educator's perspective*. Retrieved from <https://www.aph.gov.au/DocumentStore.ashx?id=214ba798-d9ff-4352-af6a-f698cfc7c082&subId=11560>
- Dunlap, R. E., Grieneeks, J. K., & Rokeach, M. (1983). Human values and pro-environmental behavior. In W. D. Conn (Ed.), *Energy and material resources: Attitudes, values, and public policy* (pp. 145-168). Boulder, CO: Westview Press.
- De Montfort University. (2023). *Eco Café*. Retrieved February 9, 2023, from <https://esdg.our.dmu.ac.uk/projects/eco-cafe/EPA> (2021). *What is Environmental Education?* Retrieved June 6, 2022, from <https://www.epa.gov/education/what-environmental-education>
- European Union. (2016). *Research evidence on the use of learning analytics—Implications for education policy*. Luxembourg: Publications Office of the European Union. <http://dx.doi.org/10.2791/955210>
- FAO. (2022). *Sustainable Development Goals: Ensure inclusive and quality education for all and promote lifelong learning*. Retrieved June 10, 2022 from <https://www.fao.org/sustainable-development-goals/goals/goal-4/en/>
- Farren, P. (2016). Transformative Pedagogy in Context: being and becoming. *World Journal on Educational Technology: Current Issues*, 8(3), 190-204. <https://doi.org/10.18844/wjet.v8i3.622>
- Fraiberg, S. H. (1967). *Les Années magiques: comment comprendre et traiter les problèmes de la première enfance [The Magical Years: How to Understand and Deal with Early Childhood Problems]*. Paris, France: Presses Universitaires de France.
- Giordan, A. (2002). *Une autre école pour nos enfants [Another school for our children?]* Paris, France: Delagrave.
- Global MOOC and Online Education Alliance. (2023). *SDG Hackathon: “Digital Transformation for a More Inclusive University Campus and Learning Environment”*. Retrieved February 9, 2023, from <https://mooc.global/event/sdg-hackathon-digital-transformation-for-a-more-inclusive-university-campus-and-learning-environment/>
- Global Opportunities. (2023). *EDU-HACK: Quality Education Hackathon for African and Middle East Countries*. Retrieved February 9, 2023, from <https://www.go-platform.com/opp/3065>
- Guidote, A. J. M. (2020). Teaching college chemistry in the time of COVID-19 pandemic: A personal account of teaching in the old normal vs. the new normal. *KIMIKA*, 31(1), 70-75. Retrieved June 1, 2022, from <https://doi.org/10.26534/kimika.v31i1.70-75>
- Henderson, V. (1947). *The Principles and Practice of Nursing*. Paris, France: InterEditions.
- Hubers, M. D. (2020). Paving the way for sustainable educational change: Reconceptualizing what it means to make educational changes that last. *Teaching and Teacher Education*, 93, 103083. <https://doi.org/10.1016/j.tate.2020.103083>
- Jennings, N., Swilder, S., & Koliba C. (2005). Place-Based Education in the Standards-Based Reform Era—Conflict or Complement? *American Journal of Education*, 112(1), 44-65. <https://doi.org/10.1086/444522>
- Kioupi, V., & Voulvoulis, N. (2019). Education for Sustainable Development: A Systemic Framework for Connecting the SDGs to Educational Outcomes. *Sustainability*, 11(21), 6104. <https://doi.org/10.3390/su11216104>

- Legendre, R. (2002). *Stop aux réformes scolaires: Pour dénouer la crise maintenant [Stop school reforms: To resolve the crisis now]!* Montréal, Canada: Gaetan Guérin.
- Marcotte, G. (2006). *Manifeste du mouvement humanisation [Manifesto of the humanization movement]*. Québec, Canada: Éditions Humanisation.
- Maslow, A. H. (1943). A Theory of Human Motivation. *Psychological Review*, 50(4), 370–396.
- Maslow, A. H. (1971). *The farther reaches of human nature*. New York, NY: Viking.
- Maslow, A. H. (1987). *Motivation and personality* (3rd ed.). Delhi, India: Pearson Education.
- McInerney, P., Smyth, J., & Down, B. (2011). “Coming to a *place* near you?” The politics and possibilities of a critical pedagogy of place-based education. *Asia-Pacific Journal of Teacher Education*, 39(1), 3–16. <https://doi.org/10.1080/1359866x.2010.540894>
- McLeod, S. (2023). *Maslow's hierarchy of needs*. Retrieved April 3, 2023, from <http://www.simplypsychology.org/maslow.html>
- Mezirow, J. & Taylor, E. W. (2011). *Transformative learning in practice: Insights from community, workplace, and higher education*. San Francisco, CA: Jossey-Bass.
- Morin, E. (2000). *Les sept savoirs nécessaires à l'éducation du futur [The seven skills necessary for the education of the future]*. Paris, France: Seuil.
- Nilsson, A., von Borgstede, C., & Biel, A. (2004). Willingness to accept climate change strategies: The effect of values and norms. *Journal of Environmental Psychology*, 24(3), 267–277. <https://doi.org/10.1016/j.jenvp.2004.06.002>
- Papalia, D. E., & Olds, S. W. (1989). *Human Development*. New York, NY: McGraw-Hill.
- Parmentier, M. (2002). *Le vocabulaire de Locke [Locke's Vocabulary]*. Paris: Ellipses.
- Piaget, J. (1983). *Piaget's theory*. In P. Mussen (Ed.) *Handbook of Child Psychology*. (4th ed., Vol. 1). New York: Wiley.
- Quendler, E., Lamb, M. J., & Driouech, N. (2020). Sustainable education, employability and job opportunities for next generations in the digital era. In M. London (Ed.). *The Oxford Handbook of Lifelong Learning* (pp. 483–526). New York, NY: Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780197506707.013.24>
- SDG Café. (2020). *Welkom bij het [Welcome to it] #SDGCafé*. Retrieved February 10, 2023, from <https://sdgcafe.nl/>
- SDSN YOUTH (n.d.). *Sulitest*. Retrieved from <https://sdgzone.com/engage/how-can-i-test-my-knowledge/>
- Sen, A. (1992). *Inequality re-examined*. Oxford, England: Oxford University Press.
- Slimak, M. W., & Dietz, T. (2006). Personal values, beliefs, and ecological risk perception. *Risk Analysis*, 26(6), 1689–1705. <https://doi.org/10.1111/j.1539-6924.2006.00832.x>
- Sterling, S. (2008). *Sustainable education—Towards a deep learning response to unsustainability*. Policy and Practice: A Development Education Review, 6, 63–68. Retrieved from <https://www.developmenteducationreview.com/issue/issue-6/sustainable-education-towards-deep-learning-response-unsustainability>
- Stern, P. C. (2000). New environmental theories: Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues*, 56(3), 407–424. <https://doi.org/10.1111/0022-4537.00175>
- Sunway University. (2023). *#SUSTHACK – The Hackathon Approach to Sustainable Development*. Retrieved February 10, 2023, from <https://university.sunway.edu.my/explore/thinkpieces/SUSTHACK>
- Thomas, C. D. (2013). The Anthropocene could raise biological diversity. *Nature* 502 (7). <https://doi.org/10.1038/502007a>
- Toner, C. (2011). Evolution, naturalism, and the worthwhile: A critique of Richard Joyce's evolutionary debunking of morality. *Metaphilosophy*, 42(4), 520–546. <https://doi.org/10.1111/j.1467-9973.2011.01710.x>
- UNESCO. (2021). *Global education monitoring report. 2021/2: Non-state actors in education. Who chooses? Who loses?* Paris, France: Author. Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000379875>
- United Nations University. (2016). *SDGs Cafe Series*. Retrieved February 9, 2023, from https://oui.unu.edu/en/events/events_cat/sdgscafe

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- United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development* (A/RES/70/1). Paris, France. Retrieved from <https://sustainabledevelopment.un.org/post2015/transformingourworld/publication>
- United Nations. (2017). *Education for sustainable development goals. Learning objectives*. Paris, France: UNESCO. Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000247444>
- United Nations. (n.d.). *OSS4SDG Hackathon SDG#4 - Quality Education*. Retrieved February 9, 2023 from <https://ideas.unite.un.org/moodleapp/Page/Overview>
- University of Washington. (2017). *Curriculum transformation: Fostering inclusive classrooms*. Retrieved February 10, 2023 from <https://www.washington.edu/trends/curriculum-transformation-integrating-diversity-and-fostering-an-inclusive-classroom/>
- Wahba, M. A., & Bridwell, L. G. (1976). Maslow reconsidered: A review of research on the need hierarchy theory. *Organizational Behavior and Human Performance*, 15(2), 212–240. [https://doi.org/10.1016/0030-5073\(76\)90038-6](https://doi.org/10.1016/0030-5073(76)90038-6)
- Wright, M. F., Cain, K. D., & Monsour, F. A. (2015). Beyond Sustainability: A Context for Transformative Curriculum Development. *Transformative Dialogues: Teaching & Learning Journal*, 8(2). Retrieved from <https://td.journals.psu.edu/td/article/download/1151/611>

KEY TERMS & DEFINITIONS

Human capabilities: Human capabilities are the conditions or states of enablement that make it possible for learners to do things according to their perceived needs. They are a person's effective levels of empowerment to achieve valuable outcomes, such as being adequately nourished, taking part in the life of a community, or appearing in public without shame. Human capabilities can vary widely, from being able to fulfil basic material conditions (e.g. nutritional health), to more sophisticated social experiences (e.g. having meaningful relationships with other individuals and communities), to political power, (e.g. effectively participating in political decisions fostering sustainable development). The multidimensionality of these capabilities (see Figure 1) plays a role in understanding how the learning environment relates to human needs and SDGs. In question form, the capability targets in figure 1 easily lead to the definition of a set of learning outcomes or targets in the educational sense.

Human needs: Whether or not a human's life is sustainable depends on the level of fulfillment of a series of needs. Maslow catalogued these human needs as a hierarchy ranging from the 'basic' necessary for survival to the higher level of 'transcendence', the fulfillment of the previous level enabling one to concentrate on the next. It is quite clear that the fulfillment of any need acts as a driver and dictates human motivation. It is also quite clear that the fulfillment of any individual's needs may impact another's ability, capacity and opportunity to fulfill their own. It also goes without saying that the fulfillment of any individual's needs will have an impact on the physical environment (resource use, habitat, emissions etc.). The perception of needs is unique to each individual. The fulfillment of any particular need can form goals in an individual's life (health, happiness, employability, social standing etc.) and even be used as indicators to assess the level of 'satisfaction' attained.

Sustainable Development Goals: The Sustainable Development Goals (SDGs) or Global Goals are a collection of 17 interlinked global goals designed to be a "blueprint to achieve a better and more sustainable future for all." They also known as the Global Goals. These 17 SDGs are integrated—they recognize that action in one area will affect outcomes in others, and that development must balance social, economic and environmental sustainability. Education for sustainable development (ESD) is explicitly recognized in the SDGs as part of Target 4.7 of the SDG on education. At the same time, it is important to emphasize ESD's importance for all the other 16 SDGs. With its overall aim to develop cross-cutting sustainability capabilities in learners, ESD is an essential contribution to all efforts to achieve the SDGs. This would enable individuals to contribute to sustainable development by promoting societal, economic and political change as well as by transforming their own behavior.

The perfect match for education for sustainable development: human needs versus sustainable altruism?

Sustainable transformation: The transformation to sustainable development is about fostering a change through achieving the SDGs. This transformation towards sustainable futures is an alternative possibility for people and the planet. Sustainable transformation also requires a change in our educational system. This transformation may help us to step out of the "comfort zone" of our traditional mindset to overcome inherent limitations for an evolving planetary consciousness. A notion of a developmental or evolutionary perspective of human consciousness would be the key to inner transformation of the individual self as guided by Maslow's needs and the all-encompassing collective self - leading also to sustainable planetary transformation. The individual, personal level of transformative change is one dimension of a sustainable sociotechnical change processes.

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