Still searching for (education for) sustainable development – reflections on the need, challenges, and chances of transforming education in the 21st century

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ABSTRACT

Scientific evidence has been put forward over and over again in the past decades that, during the Anthropocene, human impact on the various spheres of the Earth has grown to an extent that actually threatens the overall resilience of the Earth system and thus the basis for the existence of future societies. New concepts to tackle the problems ahead and to regain control about positive future development are urgently needed. Education – or rather the transformation of education – and the possible role of education as a key instrument to reach the Sustainable Development Goals could play a prominent role here. However, as both sustainable development and education for sustainable development are still in their infancy, radical changes of the actual concepts of education (for sustainable development) and a new focus on (constructivist) learning have to be discussed. In this paper, the needs, challenges, and chances of transforming education in and for the 21st century are reflected upon .

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INTRODUCTION

Geologically speaking, Planet Earth has witnessed the epoch of the Holocene for the past 11,700 years (Cohen, Harper, and Gibbard, 2016; Telford, et.al., 2004; Trachsel and Telford, 2017). During this 'entirely new' epoch ('Holocene' is derived from Greek holos, whole or entire and kainos, recent or new) on Planet Earth, many natural changes around the world have occurred: shifts of climate patterns, of vegetation zones, of the composition and distribution of the fauna etc. (Coard and Chamberlain, 1999; Mancini, 2009; Robert, 2014).

However, yet another factor appears on the horizon which would ultimately lead to major – even stronger than natural – changes of the Earth system, as the Pleistocene-Holocene transition coincides with the expansion of mankind. In a nutshell: The noticeable influence of humankind on nature can be traced back tens of thousands of years, e.g. by evidences of the extinction of two thirds of large mammals between 50,000 B.P. and 12,500 B.P. (Barnosky et.al., 2004; Braje and Erlandson, 2013), the Neolithic

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agricultural revolution with its (beginning) domestication and exploitation of plants and animals [87] near the end of the Ice Age and on into the early Holocene, or extensive rice growing and the increase of cattle farming from 5,000 B.P. onwards, both emitting methane on a large-scale (Ruddiman and Thomson, 2001; Ruddiman, 2003; Ruddiman, 2007; Ruddiman, et.al., 2008), and all leading to long-term anthropogenic changes of ecosystems (Ruddiman, et.al., 2015). This is particularly true for the era of the industrial revolution, and the invention of James Watt's steam engine (patent registration in 1781) is frequently used as an important time marker indicating a new phase of human impact (Crutzen and Stoermer, 2000) which would be unprecedented in its dimension and intensity.

MOTIVATION—THE ANTRHOPOCENE

Crutzen and Stoermer (2000) explain in detail the ways in which, and to what extent mankind has intensified its influence on the Earth's spheres over the past centuries, not only by growing in number, but also by increased per capita exploitation of resources (Jischa, 2008 and Kromp, 2013). On top of this, the total disrespect of nature and complete disregard of the limits of the planet must be taken into consideration. Crutzen and Stoermer (2000) argue the human factor has, in many cases, become even more weighty than natural processes, and thus "replaces nature as the dominant environmental force on Earth" (Ruddiman, et.al., 2015). Steffen et al. (2015a) describe some of the global change(s) the Earth system has witnessed due to anthropogenic impact from 1750, e.g. the increase of carbon dioxide, nitrous oxide, and methane in the atmosphere, the rise in the surface temperature, tropical forest loss, and many more.

What is striking is the sharp upwards trend from around 1950 that can be detected in most of their graphs. There is no doubt that human impact has accelerated enormously after the end of World War II following a new and long-lasting era of peace, economic growth, technological advances and prosperity in many parts of the world, predominantly beginning in what has come to be known as the 'Western World'. Steffen et al. (2007) call this phase "The Great Acceleration" and/or "Stage 2 of the Anthropocene". "Population doubled in 50 years, to over 6 billion by the end of the 20th century, but the global economy increased more than 15-fold. Petroleum consumption has grown by a factor of 3.5 since 1960, and the number of motor vehicles increased dramatically from about 40 million at the end of the War to nearly 700 million by 1996. From 1950 to 2000 the percentage of the world's population living in urban areas grew from 30 to 50% and continues to grow strongly. The interconnectedness of cultures is increasing rapidly with the explosion in electronic communication, international travel and the globalization of economies" (Steffen, et.al., 2007). Steffen et al. (2015b) demonstrate the development of selected components of the change in the human enterprise from 1750 until now, and depict the consequences, amplitude, and speed of the Great Acceleration after the Second World War. Some of the components did not even exist before 1950 (e.g. international mass tourism). All components, again, show a sharp rise after 1950, e.g. the primary energy use, the building of large dams, or the fertilizer consumption. Interestingly enough, turning a blind eye to ecological matters seems to have been both a precondition for, but also an inevitable consequence of the Great Acceleration (Garrard, Handwerk, and Wilke, 2014; McNeill and Engelke, 2014).

No matter where we determine the exact starting point of the Anthropocene to be (Zalasiewicz, et.al., 2014; Ruddiman, et.al., 2015; Working Group on the 'Anthropocene', Subcommission on Quaternary Stratigraphy, International Commission on Stratigraphy, 2016; Zalasiewicz, et.al., 2019), it is undeniable that the human race has

put enormous pressure on, and leads to many changes in the global natural environment to the current day. These changes are partly visible. Consider the transformation of natural forests and grasslands into fields, pastures, or built land, or of sewage-induced carpets of algae, heavily polluted rivers, cities under smog, among others. Invisible changes include decreases or increases in ozone levels in various strata of the atmosphere, and, of course, the emission of greenhouse gases. The manifold changes caused by humanity can be summarized as "pervasive" (Ruddiman, et.al., 2015), "profound and partially irreversible" (Fairchild and Frisia, 2014), and they happen under the given circumstances of the ever increasing speed of Global Change (International Council for Science, 2010).

Scientific evidence has been put forward over and over again in the past decades that human impact on the various spheres of the Earth has grown to an extent that actually threatens the overall resilience of the Earth system and thus the basis for the existence of future societies. Steffen et al. (2015b) remind us of the fact that the "relatively stable (…) Holocene epoch is the only state of the Earth system that we know for certain can support contemporary human societies", and that mankind is affecting, possibly even ending, the ability of the Earth system "to persist in a Holocene-like state" in the near future.

In the so-called 'Planetary Boundaries Model', a group of Earth system scientists led by Johan Rockström from the Stockholm Resilience Centre and Will Steffen from the Australian National University, try to identify what they call the 'safe operating space for humanity' (Rockström, et.al., 2009a; Rockström, et.al., 2009b; Young and Steffen, 2009; Wijkman and Rockström, 2012; Steffen, et.al., 2015b; Sterner, 2019). In their model, nine planetary "life-support systems" (Steffen, et.al., 2015b) essential for human survival – i.e. nine vital components of the Earth system and their biophysical Planetary Boundaries – come under scrutiny. Planetary boundaries as such are defined as "scientifically based levels of human perturbation of the Earth system beyond which Earth system functioning may be substantially altered" (Steffen, et.al., 2015b). There is a strong interconnection between the nine boundaries, however, and "if one boundary is transgressed, then other boundaries are also under serious risk" (Rockström, et.al., 2009a) It is important to understand, however, that these boundaries are not identical with (possibly) identifiable biophysical thresholds or tipping points, but they are positioned in what is regarded as the safe space before reaching the threshold. The idea behind this is both to acknowledge that there are still many unknown items and imprecisions in system knowledge regarding various thresholds, and also – "applying a precautionary principle" (Stockholm Resilience Centre, 2012) – to allow societies some time to react when a threshold is threatened to be reached (Wijkman and Rockström, 2012). It is warned that 'biosphere integrity' (including both genetic diversity and functional diversity, the global-level boundaries for the latter, as to their complex character, have not been quantified so far) and 'climate change' are both fundamentally important and have the capacity to send the Earth system as a whole into an entirely new – Post-Holocene – state, and totally change its functioning (Steffen, et.al., 2015b).

Summing up, Zalasiewicz et al. (2008) underline the significant negative effects resulting from the combination of a large-scale extinction of species, destruction and fragmentation of natural ecosystems, and anthropogenic climate change. They warn that the "effects will be more severe than in past glacial-interglacial transitions" and that "future evolution will take place from surviving (and frequently anthropogenically relocated) stocks" (Zalasiewicz, et.al., 2008) It must therefore not be forgotten that human impact has become "permanent" (Zalasiewicz, et.al., 2008) or will, at least, last

over tens of thousands of years (Crutzen and Stoermer, 2000; Steffen, et.al., 2007; Zalasiewicz, et.al., 2008). Regrettably, this is true even though it has largely been caused by only 25 % of the global population (Crutzen, 2002). The prediction that – without major natural or anthropogenic catastrophes – "mankind will remain a major geological force for many millennia, maybe millions of years, to come" (Crutzen and Stoermer, 2000) must also be considered. At the end of the day, it is the combination of all anthropogenic changes and their combined signals that "render the Anthropocene stratigraphically distinct from the Holocene and earlier epochs" (Waters, et.al., 2016)

Small wonder, then, that scientists have started to sound serious warnings about the future of Planet Earth: "The Great Acceleration is reaching criticality. Enormous, immediate challenges confront humanity over the next few decades as it attempts to pass through a bottleneck of continued population growth, excessive resource use and environmental deterioration. (…) Whatever unfolds, the next few decades will surely be a tipping point in the evolution of the Anthropocene" (Steffen, et.al., 2007). New concepts to tackle the problems ahead and to regain control about positive future development are urgently needed. Education – or rather the transformation of education – will play a prominent role here.

PRO-ACTION—TRANSFORMATION OF EDUCATION (FOR SUSTAINABLE DEVELOPMENT) IN THE ANTHROPOCENE

In order to establish a basis for further discussion, let us first have a look at some fundamental goals of education. Although education is universally acknowledged to be an individual human right "directed to the full development of the human personality" (United Nations General Assembly, 1948), it is nothing new that societies see education as a guarantee for their own future survival.

As a baby is born unable to speak, read, write, or calculate, and without knowing anything about the achievements, norms, and values of the society he/ she has suddenly become part of, families, friends, teachers, and other actors of the same society undertake all sorts of efforts to educate and thus integrate the child as fast as they possibly can. In pluralistic societies, however, beyond the "social continuity of life", there is the important goal of "equip[ping] individuals with the skills and substantive knowledge that allows them to define and to pursue their own goals, and also allows them to participate in the life of their community as full-fledged, autonomous citizens" (Phillips and Siegel, 2013). Rooted somewhere in between the extremes of educating for the reasons of the continuity of a society, and/ or for achieving the highest possible independency and individuality of a person and to enable a person to lead a good life, the philosophical debate about education has been going on for thousands of years.

Considering the uncomfortable reality that nowadays, under the given circumstances of ever increasing Global Change, there is nothing more permanent than the need for continuous change, the continuity of societies depends on their own transformation capacities, and, maybe more than on anything else, the transformation of education. Considering also the warning voices of Phillips, Siegel (Phillips and Siegel, 2013) who state that, "when a society is shaken by a crisis, this is often taken as a sign of educational breakdown" (Clawson and Page, 2015). It is teachers who are consequently abused as 'scapegoats'. It is high time to realize that education must be among the first to pro-actively prepare for what has been agreed to be called the Grand Challenges of the 21st century (Keller, 2017), and to really turn education into a "key instrument to achieve the sustainable development goals (UNESCO, 2017). In this context, simply picking up relevant topics or accepting minor pedagogical changes alone will certainly not do. What

is really needed is a total transformation of education leading to societal transformation towards sustainable Development.

It is important to express clearly, however, that education will always mean walking a narrow mountain path. Torn between the societal, institutional, and individual targets of education, it is important to realize the strong normative philosophical component education can have (Curren, 2007; Gutek, 2014; Noddings, 2015; Pavlova and Lomakina, 2016). The normative philosophy of education follows certain world views, moral values, and norms that have been socially agreed upon, and thus sets selected educational goals, and educational methods to reach them. "Educational aims express something that is desirable, such as abilities, competencies and virtues that should be acquired. (…) The objective is not only to investigate human behaviour, but also to guide it" (Pavlova and Lomakina, 2016) . Above all, in the discussion of the main principles and central ideas behind education for sustainable development, it becomes obvious that there is a strong ethics and values component of sustainable development. Thus, the normative potential of education and its advantages for (education for) sustainable development (Firth and Smith, 2016) – where creating social change is considered to be the "ultimate goal of education for sustainability" by Sharma, Monteiro (Sharma and Monteiro, 2016) – have to be emphasised.

On the other hand, we must never forget the dangers and disadvantages a strongly normative kind of education might have for the individual and societies, and also for and sustainable development per se. When Freire (2000) campaigns for a dialogical approach to education, he underlines the importance of humans having the potential to exhibit "consciousness as consciousness of consciousness". This implies that, if education is reduced to a means of merely passing on certain knowledge, specific norms, predefined values, standardized competencies etc. within a society as described above, without further conscious reflection, would lead to education falling short of its true responsibilities.

Although it is clear that "educational systems contain both transformative and reproductive elements (…) ideally, education would reproduce the 'good' and transform the 'bad'" (Desjardins, 2015). It is, therefore, reassuring in terms of sustainable development that, in principle, individual human beings can be educated to first reflect on and then consciously and freely take action to contribute to positive future developments (Speth, 2008).The perception of the importance of individuals as active change agents, and thus the meaning of education for the free development of every individual human being, however, are still not universally acknowledged (O'Brien, 2012).Then again, and increasingly over the years, the idea of empowering people has moved to the forefront of key principles in education for sustainable development. Looking at it from both the individual and the society at large perspectives, empowerment through education for sustainable development strives to raise everyone's awareness of all kinds of challenges related to sustainable development (Barth and Rieckmann, 2016), and increasing the individual's ability to participate in and contribute to societal advance, and thus improving individual and collective life locally and globally now and in the future (Olsson, Gericke, and Chang, 2016). Even though this might sound convincing, it is also true that most of the international political documents concerning education for sustainable development, and many expressions of education for sustainable development in pluralist societies reflect rather anthropocentric views, and thus prioritize human needs and social justice over ecological issues (Kopnina and Cherniak, 2015), not taking into account the intrinsic value of nature itself (Sandell, et.al., 2005) which attracts disapproval.

When we ask why we educate, climate change can serve as a good example to illustrate the complexity of the question. In light of the consequences of climate change, e.g. droughts, rising sea levels, extreme weather events, increasing risk of related natural hazards etc., should we focus on teaching the physical basis of climate change or on its scientifically deducible consequences in their manifold realities, and seen and interpreted from diverse perspectives (as democratically oriented education might suggest)? Or should we focus on mitigation measures to reduce any further human contribution to anthropogenic climate change? Bearing in mind, of course, that developing countries should maybe have more rights to add more greenhouse gases than those in the Western world, so people there can enjoy the benefits of exploiting resources as Western societies have done for so long (Kopnina and Cherniak, 2015). Or perhaps we should focus on the adaptation to climate change, which would mean that education might possibly have to accept climate change as irrevocable, and thus take attention away from important consumption reduction and other climate change mitigation measures, and concentrate on preparing students for concrete 'real life'-matters under the given circumstances of climate change, e.g. taking "safe routes to school in the event of flooding" (Krasny and DuBois, 2016), thus becoming increasingly anthropocentric once more?

The same anthropocentric attitude can generally be detected in many sustainable development contexts, and often 'development' means nothing other than 'more' in the sense of 'more' (Sandell, et.al., 2005), while we should be striving for the 'more' in the sense of 'better'. Goal 8 in the sustainable development Goals, to give one current example, states: "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all" (United Nations, 2015). Honi soit qui mal y pense. Obviously, letting go of the paradigm of endless growth poses a huge difficulty, yet it is hard to believe that even "the ethical principles of intragenerational and intergenerational equity as fundamental pillars of sustainable development" (Kopnina and Cherniak, 2015) have mainly been interpreted and treated from the point of view of the economy. In fact, the discussion circles around fair trade and fair shares when exploiting the Earth's natural resources, and, in practice, once more reflects the philosophy of the neoliberal market economy (Kopnina, 2014; Hursh, Henderson, and Greenwood, 2015; Kopnina and Cherniak, 2015). Small wonder that Huckle and Wals (2015) sum up the development for education in their very pointed article entitled 'The UN Decade of education for sustainable development: business as usual in the end'. In an extensive analysis of key publications supporting education for sustainable development, they conclude that the documents take no more than a predominantly reformist perspective of sustainable development taking into account ever increasing global problems, suggesting changes in lifestyle, moral and ethical values etc. – all the existing forms of society! Even worse, some ask whether (education for) sustainable development might lead to changes in structures and processes increasing the power and wealth of an elite group of people (Bengtsson and Östman, 2016). What is sorely missing, however, are statements or claims on perhaps more radical shifts and new concepts of societal transformation.

It is noted that the key documents on education for sustainable development are all too weak (or simply not brave enough) to challenge "neoliberalism as a hegemonic force blocking transitions towards genuine sustainability" (Huckle and Wals, 2015). A number of serious authors express (implicit or explicit) warnings that education for sustainable development might one day (if not already) be blamed for the "dispersion of neoliberalist ideologies" (Bengtsson and Östman, 2016) after all (Jickling, 2005; Sauvé, Brunelle, and Berryman, 2005; Sandell, et.al., 2005; Jickling and Wals, 2008; Hursh,

Henderson, and Greenwood, 2015). Even though this kind of criticism might be going too far, it is still well worth reflecting upon when talking about post-2015 education for sustainable development, which may possibly even represent some kind of "counter-hegemonic vision for global education" (Enns, 2015).

Once again, it is not very hard to see that we end up being faced with questions of moral and ethical values. It has to be asked how much education is really supposed to directly and strongly influence people's behaviour, something which may even be considered to be inappropriate in democratic systems (Firth and Smith, 2016), and therefore as being "inconsistent with evolutionary tendencies of ethics and a number of the criteria for education" (Jickling and Spork,1998). Of course, we should carry on trying to educate "reflecting individuals with an awareness of conflicting interests" (Hasslöf and Malmberg, 2014), and also keep holding human rights and the ideals of social justice high. On the other hand, how can it be ethically wrong, for instance, to take the imperative of not crossing the Planetary Boundaries seriously, and thus do everything we can to trigger changes in humans' behaviour by means of a holistic and wholesome transformation of education? Yet, at the same time, we must avoid any kind of indoctrination or "academic imperialism" (Sumner, 2008) in general, and a "promotion of a sustainable world served by experts or the worldview of the particular teacher in charge" in particular (Hasslöf and Malmberg, 2014).

Vare and Scott (2007) have given one possible (but certainly not the final) answer here by distinguishing what they call 'ESD 1' and 'ESD 2'. The first type of education for sustainable development is seen to accept scientific evidence based on the fact that, more than anything, humanity faces environmental challenges (Firth and Smith, 2016), and thus promotes "informed, skilled behaviours and ways of thinking (Vare and Scott, 2007). 'ESD 2', the second type, opens the door to critical thinking on experts' analyses, on societal dilemmas, and contradictory views on sustainable lifestyles and quality of life. In fact, this approach might respect both the advantages and disadvantages of educational approaches identified so far in the context of education for sustainable development.

Facing all criticisms of education for sustainable development, facing the Grand Challenges of the 21st century, facing an increasingly hectic and aggressive debate on future global development, facing increasing global inequalities, economic crises, and climate change etc. (Sayed and Ahmed, 2015) it seems hard to remain calm and to stick to the (albeit partly ambiguous) ideals and values of (education for) sustainable development. Perhaps Scott et al. (2003) succeed best in describing the interconnection between sustainability and learning, when they call this endeavour an issue of complexity, uncertainty, risk, and necessity. Given the necessity, it seems difficult to find an alternative to (education for) sustainable development, particularly as "almost everyone can see that our current lifestyle is unsustainable" and that "most people understand what we mean when we say something is unsustainable" (McKeown and Hopkins, 2003). So, while we still do not know what exactly it will look like, there is no alternative to leading post-2015 education for sustainable development to success. The overall goal of education for sustainable development "to fulfil a better future for all" (Hasslöf and Malmberg, 2014) keeps inspiring, and should guide the discussion on a transformation of education for sustainable development in the post-2015 era (UNESCO, 2019a).

CHALLEGES AND CHANCES OF TRANSFORMING EDUCATION (FOR SUSTAINABLE DEVELOPMENT)

As mentioned above, the transformation of education (for sustainable development) can and must not mean a simple shift of topics dealt with, or the odd item of innovative pedagogy added, leaving the overwhelming remains of what the overwhelming majority of societal actors – teachers, students, university staff, yet also the broad public – consider as relevant to education – i.e. concepts of education – completely untouched.

While this is clearly not the place to detail the weaknesses and failures of today's educational approaches and systems, these issues are at least as shocking as the fact that the transformation towards sustainability has not yet even started (Helne and Hirvilammi, 2015). Under these circumstances, it is pointless (and, above all, impossible) to give something like a general summary of the challenges and chances of transforming education in and for the 21st century. However, some concluding thoughts about the necessity and chances of this transformation might be helpful.

While it can be read in the 'Encyclopedia of Science education' (Gunstone, 2014) that "for nearly 50 years, constructivist theory has been making a significant contribution to education, shaping the way we think about the active role of the mind of the learner" (Taylor, 2014), practical experience in educational processes and systems does not tell the same story (Kroll, 2004; Fosnot, 2005; Young and Lambert, 2014). On the contrary, it is, at best, an open secret that education is still strongly influenced by objectivism, i.e. the belief in a world that can be "completely and correctly structured in terms of entities, properties, and relations" (Lakoff, 1987). Getting to know these entities, properties, and relations, striving for a total and correct understanding is thus the declared goal of education under objectivist tradition (Duffy and Jonassen, 1992). Small wonder that the idea of 'instruction' has predominantly emerged from objectivism as well and that instruction still plays the leading role in educational systems. One of the most radical proponents of Radical Constructivism, claims that educational approaches still encompass contents far off from students' real lives and interests, which leads to a lack of intrinsic motivation, and a concentration (of both students and teachers) on the next exam rather than on developing competencies – a view commonly shared in contemporary scientific literature (Brabazon, 2016; Elkana and Klopper (Eds.), 2016).

Changing the perspective and looking at the chances ahead, constructivist education, for sure, opens up many possibilities. As already noted, learning cannot simply be regarded as the act of passing on knowledge from one person to another (possibly from teacher to learner), but has to be acknowledged as being an active process of construction within every individual learner (Pavlova and Lomakina, 2016; Herweg, Schäfer, and Zimmermann, 2012). Thus, the educational goal cannot merely be to make sure that certain items of knowledge are passed on and reproduced, but to enable learners to construct plausible interpretations of certain sectors of knowledge (e.g. without or beyond the information given, respecting various perspectives, world views, and alternative interpretations (Cunningham, 1992). How these interpretations have come about, and how the learners have created knowledge within the learning process ought to be reflected upon intensively, and be part of the assessment as well.

The constructivist notion of learning leads to many subsequent consequences for teaching (Herweg, Schäfer, and Zimmermann, 2012). What is vital for learning effectiveness in this process is the necessary change in concepts of the roles the individual groups contributing to education have to take (Thomas, 2010; Herweg, Schäfer, and Zimmermann, 2012). As opposed to the classical method of instruction, the

learners are freed of their (rather passive) role of parroting what the teacher / the textbook / some source of information etc. has told and 'taught' them. On the contrary, learners must now play an active role in learning, making use and taking advantage of the contextual and methodological freedom given in an activating learning setting, which also respects the previous observations, experiences, and knowledge, or, to put it more succinctly, the (pre-) concepts of the individual learners. Educationists from various educational fields, e.g. from subject didactics, have to assist teachers in providing such effective learning settings, and keep monitoring, evaluating, and developing them. Above all, they have to help teachers acquire the relevant competencies to create functioning educational settings, which, in reality, is not as easy as it may sound (This is also one of the reasons why education for sustainable development is still in its infancy.). While the learners are active, teachers (and educationists) have to take on a (seemingly) rather passive role, except for maybe giving the odd piece of advice when directly asked for by the learners, respecting the individuality and self-determination of the learning. So, their task is firstly to actively create effective learning settings, and then to keep monitoring and evaluating their settings and the individual learning processes of their students. This change of roles – and thus the change of focus on learning (not teaching) – is imperative for any future transformation of education (for sustainable development).

CONCLUSION

A last exciting thought: As opposed to traditional educational settings where education terminates at the end of the lesson, education ought to be seen as a starting point for democratic engagement and action (Osberg and Biesta, 2010; Rautiainen, 2019). It is assumed that "democratic learning enables students to be critically rational and ethical agents able to make informed choices in regard to sustainability challenges" (Kopnina and Cherniak, 2015), and that education for sustainable development is about enabling and empowering individuals to live responsibly, and to create quality of life for more resilient and sustainable societies (UNESCO, 2019b). To put it another way: "Education for sustainable development is about much more than preaching and teaching on sustainable development. It is (…) about practicing sustainable development" (UNESCO, 2014).

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