7 Education as a Vessel – Transformative Spaces and Relations for a Sustainable Higher Education with Transdisciplinary Aspirations

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7.1 Introduction

Conceptually understanding education as a vessel suggests the importance of being in relationship with oneself. Especially when the vessel is filled with breath, provides space to and protects the breath (as the inhaled and expressed expression of oneself). The breath emerges from consciousness, indicating that it holds great value. It is important to preserve it for as long as possible in a comfortable vessel of appropriate form. In his trilogy Spheres I, II, and III, philosopher Peter Sloterdijk (1998) uncovered a cultural-historical treasure of humanity, titling it in the form of bubbles, globes, and foams. In this introduction, Sloterdijk's metaphor helps to descend from transformative heights and to venture an outlook based on values, emotions, and the relationships that emerge from them (Sloterdijk, 1998). Educational concepts are designed by crucial individuals within structures in which they live and act normatively. They are applied to challenges, such as those to transform coal exit region as model applications for change and transformative learning. Knowledge concepts in such a sense, make it possible to bring structural change, e.g. through transdisciplinary approaches, to realization. In this context, the university as a scientific institution is itself under transformation pressure, since it must generate future-relevant overall statements as a knowledge mediation and knowledge generation institution at the center of the transformation process. This is also true of concepts for higher education. They include liberties, but only after meeting access restrictions, such as those of the Numerus Clausus (NC) concept in Germany as restrictions on access to degree programmes. These restrictions can ensure disciplinary scientific orientations, instead of inter- and transdisciplinary orientations. The perspective of performance-oriented evaluability raises the question

if self-efficacy is restricted or not. Self-efficacy is not meant to be understood here in the sense of self-optimization, it refers to an individual's capacity (and belief in their ability) to successfully execute action and attain a desired outcome in a given situation (Bandura, 1982).

Since April 2012, universities have submitted themselves to the Bologna concept as an evaluation standard for their work. The aim is to achieve better comparability and facilitate students to transfer between institutions. Performance recognition is based on a transparent credit point system (the ECTS system) in this sense. In addition to all the entry restrictions, assessment criteria and performance tests that must be taken in order to enter the higher education system, students and university members today are confronted more than ever with complex crises and wicked problems. Wicked problems are complex and systemic issues that are difficult to define, have multiple causes and consequences, and lack a clear solution, as described by Arjen Wals (2017, 2014). Anthropogenic climate change and biodiversity loss are examples of this. These existential problems challenge mainstream lifestyles of industrialised nations. This criticism of the Anthropocene (Crutzen, 2002) highlights the unequal distribution of resources and the impact of unsustainable consumption patterns on the Global South, as discussed in academic literature on environmental justice and postcolonial theory (Shiva, 2008; Escobar, 2012). The critical question is whether universities today are able to equip students with the necessary skills to address wicked problems, to confront them and to become part of the solution in the sense of change agents. It cannot be the claim that all higher education institutions and students in Germany meet these requirements – nevertheless, a discourse and serious efforts in this direction are more than desirable yet not sufficiently met (Elkana & Klöpper, 2013).

What do the introductory thoughts lead us to in terms of future-oriented educational concepts at German universities in light of the tasks set out in this text? Before answering the question, we here explain the structure of this paper. CoSR is aware of having produced a rather unusual article, which follows an associative-intuitive process and understanding. However, the questions that it attempts to address defy linear answers, for they are indications of the need for possibly a new path that might allow inspiration to unfold. In order to help generate the capacities for self-efficacy and effective action towards sustainability, this paper emphasizes the importance of creating transformative spaces while cultivating relations as a life-affirming attitude. The authors understand the adverb "transformative" as an addition to the previous transformation research discourse in the sense of being actively involved in transformation processes (Schneidewind & Singer-Brodowski, 2014). To achieve this, transdisciplinary

educational concepts must be developed as a resource for catalysing effective transformations (Lewis & Williams 1994: 5) and for bridging the knowledge-behaviour gap, as will be elaborated in the course of this paper.

The text will therefore first discuss a societal need as the starting point for such concepts and highlights transformative change. In the next section, the theoretical framing will be demonstrated through implementation-oriented ideas in thinking and acting. The German Society of Human Ecology (DGH), as well as transformative educational concepts relating to transdisciplinarity, are practical examples of the emergence and integration of transformative ideas. The practical applications of the Silence Spaces and TransLABs concepts form the conclusion of a framework for transdisciplinarity. Knowledge integration through experience of is in the focus, which leads to pay attention to processes and increased awareness through this work. Such an approach chooses CoSR not in principle as an opposition but as a homogeneity of a knowledge-society process that results from inclusion rather than integration.

7.2 Transformative Chance

A forward-looking orientation of higher education may need the support of miracles. As already reflected upon in the introduction, education also needs to be oriented towards the social, ecological and economic processes of society as a whole and the wicked problems that society faces today. Disciplinary quantification and conventional academic evaluation metrics seem rather limiting at this point. Therefore, CoSR will broaden the view a little in order to relate social phenomena to the design of educational concepts. Shouldn't transformation happen on all the levels mentioned to be profound and lasting? Sustainable development refers to the process of creating a more sustainable, equitable, and resilient society (Brundtland, 1987). At its core, transformation involves a shift in our understanding of sustainability, which goes beyond preserving the planet's resources for future generations (IPCC, 2018) and the traditional focus on efficiency (Sustainable Development Commission, 2006) as well as adaptation mechanisms. According to Overdevest et al., (2010) as well as Göpel (2016), transformative change involves a holistic and fundamental shift in values, structures, and behaviors, as well as a deep understanding of the interconnectedness of social, economic and environmental systems (Raskin, 2002). A critique of the growth paradigm (Schluchter & Renschhausen, 2007), which is based on the idea of infinite economic expansion, is an essential part of the process of socio-ecological transformation (Jackson, 2009): It is in conflict with the limits of

our planet and the need for sustainability (IPCC, 2018; Steffen et al., 2015; Meadows et al., 1972).

Social-ecological transformation efforts, therefore, must not only address the root causes of environmental degradation, but must also challenge the underlying values and structures of the capitalist system (Göpel, 2016). This may involve exposing and combating greenwashing and fake sustainability,[1] as well as advocating for alternative economic models that prioritize sustainability and social justice (Foster et al., 2010). It is not just a matter of finances, success and innovation, but a matter of separation and competition that leads to social, individual and ecological divides (Rosa, 2019; Eisenstein, 2018; Göpel, 2016; Käufer & Scharmer, 2013). Innovation can be seen as a key driver of economic growth and competitiveness (Schumpeter, 1934). It is narrowly defined as the introduction of new technologies or processes and is typically focused on incremental improvements rather than more fundamental change (Paech, 2005; Meadows et al., 1972).[2] Transformative approaches focus on the active involvement of individuals and communities as a key role in this transformation processes (Foster et al., 2010; Schneidewind & Singer-Brodowski, 2014). By valuing processes that take the inner landscape, own attitudes and the mind-set into account, these approaches can help to build the capacities needed to navigate the challenges of a rapidly changing, accelerated world. From what has been described, it is clear that transformation efforts are strongly dependent on one's own beliefs and attitudinal issues in industrialized nations. Inner transformation, as emphasized and discussed for instance by Charles Eisenstein (2011), Joana Macy (2012), Maja Göpel (2016) and Christine Wamsler together with Jami Bristow (2022), plays a crucial role in this process. It involves shifts in individual and collective values, behaviors, and world views, and is essential for creating the conditions necessary for outer transformation.

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[1] Companies may engage in greenwashing, or the practice of misleading consumers about the environmental benefits of their products and services (de Freitas Netto et al., 2020). Greenwashing allows companies to continue business as usual while appearing to be environmentally responsible, and can create barriers to the adoption of more sustainable practices and technologies (ibid.). Fake sustainability involves the adoption of superficial, narrow and shallow sustainability initiatives that do not fundamentally challenge the growth paradigm (Meadows et al., 1972). These initiatives may serve as distractions from more transformative change and can produce a false sense of progress, while still allowing the exploitation of natural resources and the externalization of environmental costs to continue (Göpel, 2016).

[2] In this context, the idea of "exnovation" Paech (2005) is an interesting concept regarding efforts towards transformation. Exnovation refers to the process of deliberately shedding outdated or harmful technologies, practices and values in order to make room for more sustainable alternatives (Paech, 2005). This concept challenges the traditional focus on innovation and emphasizes the importance of unlearning and letting go of unsustainable practices (Paech, 2005).

7.3 Concepts of Higher Education and Transformative Potentials

Educational concepts can be traced back to the earliest civilisations, when knowledge was passed from generation to generation. According to Bowen`s (1981) historical analysis, education has evolved from informal knowledge transmission in prehistoric times to the development of formal education systems. This chapter does not aim to review and critically reflect on the history of higher education. Rather, CoSR is interested in highlighting and discussing what potentials exist in the field to promote the socio-ecological transformation, healthy relations and facilitation.

According to UNESCO (2014), the primary purpose of education is to promote human flourishing, which is defined as the full realization of human potential, in all its dimensions, for the benefit of individuals and societies. This suggests that education should not only focus on preparing students for the labour market but should also aim to help them develop the skills, knowledge, and values that are necessary for a fulfilling and meaningful life. It needs to be highlighted that the modern educational system has traditionally been focused on the growth paradigm as pointed out. The modern educational system often promotes a reductionist and instrumental view of nature, leading to a disconnection between humans and the natural world (Wals, 2017). Quantitative result orientation sets the tone, while qualitative values are subordinate to it (Langner & Voggenreiter, 2020).

Facing the future(s) regarding wicked problems accompanied by a high degree of uncertainty demands according to CoSR a timely understanding and transformative impact of higher education. Higher education carries the inherent potential to develop as well as to provide knowledge as the foundation of an educated citizenry which leads to a thriving, sustainable and just society (Barth et al., 2007). Higher education generally though might rapidly lose its potency in the economic realities of the twenty-first century, unless it finds ways to respond to the critical and often non-disciplinary concerns of society (Gibbs, 2017: 6). What ways and approaches enable higher education to mitigate societal struggles? Which concepts of education and learning spaces are necessary in universities for the perception and cultivation of relationship and reflexive attitude? Does today's higher education system support learners' relationships with themselves, their peers, and the world? Focusing on sustainability might offer multiple ways to address these pressing questions. Therefore, CoSR is providing a selection of meaningful, transformative educational concepts:

Table 1: Examples of transformative educational concepts

Transformative educational concepts	Inner and outer transformative potentials	Fostering relations and facilitation
(1) Education *for* Sustainable Development (ESD I) and Education *as* Sustainable Development (ESD II) *ESD emphasises an individual's capacity building by learning through environmental awareness, reflecting lifestyles, and promoting social commitment.* (de Haan & Harenberg, 1999)	ESD I: Holistic approach to education that aims to equip individuals with the knowledge, competencies, and values necessary to create a more sustainable future (UNESCO, 2014; Wals, 2014; de Haan, 2010) ESD II: A form of learning which is systemic and gives guidance on how to deal with complex and wicked problems and act upon them (Wals, 2014; Jickling & Wals, 2008).	"Learning for, within and from sustainable development" (Wals & Peters, 2017: 790); Opens learning spaces in which people can learn and try out political co-creation in their role as citizens together (Wals, 2014) "Sustainable development doesn't just depend on learning; it is inherently a learning process" (Vare & Scott, 2007: 194)
(2) Transformative Learning *Means an education for participation which combines knowledge of the world with individual transformation experiences and personal development.* (Schneidewind & Singer-Brodowski, 2014)	Enables processes of deep personal and social transformation that occurs when individuals encounter new ideas and experiences that challenge their existing beliefs and ways of thinking. Practices refer to service learning[3], combining technical learning with extracurricular social engagement in places of social innovation (Barth et al., 2007; Mezirow, 1974).	Serves relationality by promoting critical reflection and dialogue, leading to a deeper understanding and connection between individuals (Mezirow, 2000; Freire, 1970)
(3) Single, double, and triple loop learning *Single loop learning involves making minor adjustments to existing strategies, while double loop learning questions underlying assumptions, and triple loop learning creates new learning strategies to increase organizational performance* (Argyris, 1991; Wals, 2017).	Enabling individuals and institutions to reflect on their assumptions and values, identify inconsistencies, and make changes at different levels of their thinking and behavior (Schneidewind & Singer-Brodowski, 2014; Wals, 2007).	Promoting critical reflection on the assumptions and values underlying our actions, leading to a deeper understanding of our relationship with others and the environment (Wals, 2007; Senge, 2008).

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[3] Service learning is a form of learning in which young people's social engagement is linked to subject-specific learning at school and university (UBA 2021).

(4) Transformative Education for Sustainable Development (Trafo ESD) *Takes greater account of inequalities and supports learners in discussing fundamental (global) social power relations and systemic conflicts of interest* (Danielzyk, 2013; Kaufmann et al., 2019).	It is about a profound unlearning of previously uncritically learned patterns of thinking, feeling, and acting (UBA, 2021).	Fostering mutual understanding, respect, and collaboration among diverse groups of people outside academia; Emphasising the importance of learner-centered and participatory approaches that enable learners to co-create knowledge and engage in critical reflection and action (UBA, 2021; Böhnke-Henrichs & Thomas, 2018).
(5) Transformative Literacy *"(...) has the ability to read and utilise information about societal transformation processes, to accordingly interpret and get actively involved in these processes"* (Schneidewind, 2013: 83)	Has the ability to question an individual's beliefs, attitudes, and values (Freire, 1970). Creates a framework to comprehend and embed transformation processes into actions, as individuals and through political and economic decisions. (Schneidewind, 2013; Göpel, 2016)	Involves engaging with others to challenge dominant perspectives and creating meaningful social change through education. (Schneidewind, 2013)
(6) Bildung *"Bildung is elusive but grasps the complex interplay between individual development, learning and collective culture"* (Andersen, 2020: 23).	An all-encompassing concept that refers to personal and societal development, a lifelong process of becoming and unfolding potential, and acquiring knowledge and skills (Andersen, 2020; Horlacher, 2012; Taylor, 2017).	Has the potential to create spaces for strong relationships, as it encourages individuals to engage in critical reflection and dialogue with others (Andersen, 2022).

These concepts make it obvious that understanding one's own experiences, thought and reflection processes in the context of the world for a meaningful life should be one of the central goals of higher education. These approaches emphasise that education is not only about the acquisition of information and knowledge, but rather about how to deal with learning content. CoSR wants to highlight the necessity of inviting learning processes, which allow learners to experience embeddedness to implement what they have learnt and to facilitate transformative change.

Certainly, it is not only the learners and teachers who need to open up to transformative processes in their habitual ways of thinking, learning and facilitation of teaching. The higher education institutions themselves are also called to be open to transformation. The whole-institution approach as a systematic ap-

proach can provide a framework by addressing all aspects of an institution, including policies, practices and culture to promote sustainable development and positive change (Brock, Haan, Etzkorn & Singer-Brodowski, 2018). The question is if universities manage to anchor these approaches within their current structures and curricula or whether completely new institutions have to be created in order to let transformative education formats unfold more vividly. As described the European College for Human Ecology (COHE) wants to enhance higher education in Europe by combining natural sciences, engineering, humanities, social sciences, and the liberal and fine arts by using the concept of human ecology. The college aims to guide education, research, practical work, interaction and communication among those involved. COHE raises questions about disciplinarity and the way science is lived. In the following we would like to find out how this process can unfold in the most meaningful way.

7.4 Transdisciplinarity as a Methodological Opportunity

In order to be able to explore transdisciplinarity (TD) methodically, a space is needed as a format that makes transdisciplinary processes on site possible in real terms or allows it to emerge.

This is then specifically about understanding the scope of science for neutrality and integrity. Since there will always be different knowledge and also different social processes and thus also different effects and consequences, it is important to pursue such requirements. For this reason, there is a discernible need to re-develop science methodologically – ergo: to think anew.[4]

With reference to the DGH perspective highlighted also the previously presented educational concepts based on transformative sustainable development, there is now a need for a new methodological design of procedures that explore change processes and present relevant results. Disciplines have always met these challenges within the scope of their possibilities and thus produced interdisciplinarity (Kocka, 2015). The permanent situation with ever new challenges, made clear by the ever increasing transparency of information, makes it imperative to answer the questions of people from all over the world in a meaningful way. For this reason, the methodological path that has already been taken must be taken further and likewise transformed in such a way that boundaries that have hitherto functioned as paradigmatic can be overcome or reconnected. In

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[4] Cf. the theme of the Year of Science 2018: Working Worlds of the Future. More information regarding this can be found on the corresponding BMBF-Website https://www.wissenschaftsjahr.de/2018/ (last accessed, 29.10.2023).

order to establish such connections, from the CoSR's point of view it is purposeful to recognise "relationship and space" in such a way that only aspects of transdisciplinary science enable a procedure for transformations that follow a comprehensible pattern.

In order to better understand such preconditions of today's sustainability and transformation discourse, the important work of Erich Jantsch entitled *Inter- and Transdisciplinary University as the Systems Approach to Education and Cognition* should be mentioned as the birth of the term and concept of transdisciplinarity (Jantsch, 1970). Jantsch makes it possible to think and understand transdisciplinarity paradigmatically in terms of the discipline-oriented system concepts of multi-, cross-, inter- and transdisciplinarity. Its first definition was the result of the OECD conference *Interdisciplarity, Problems of Teaching and Research in Universities* (Nice, 7-12 September 1970).

From today's perspective, the question arises as to why, despite these early and concrete guidelines, it has not yet been possible to produce a syntax that already constituted a normative effect. Jean Piaget's (1972) contribution at the same conference read as follows: "*Finally we may hope to see a higher stage succeeding the stage of interdisciplinary relationships. This would be transdisciplinarity which would not only cover interactions or reciprocities between specialised research projects, but would place these scientific relations within a total system without any firm boundaries between disciplines*".[5] A second definition by Scholz (2001) 30 years later reads: "*Transdisciplinarity is an approach of study organizing processes that link scientific, theoretic, and abstract epistemics with real-world factors that are based on experimental knowledge from outside academia. Information about real-world factors comes from relating human experimental wisdom to the analytical rigor of science and academic methodology.*" *(Scholz, 2011, S. 549).*

According to Scholz (ibid.), in contrast to Weber's categories of the normative concept of legitimacy (developed in the years 1910 to 1920), the scientific view elaborated here should claim a process-based causality to the extent that corresponding aspects of such interactions of and through domination are taken into account (Weber & Winckelmann, 2009). It may be assumed that social differences are only compensated for to a small extent, as the understanding of

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[5] "Finally, we can hope that the level of interdisciplinarity will be followed by a higher level. This would be a transdisciplinarity that not only captures the interactions or mutual exchanges between specialised research projects, but also places these relationships in an overall system without fixed boundaries between disciplines." Piaget (1972), translation Dirk Marx (2018).

domination would not allow this in principle (Breuer, 2014; Derman, 2012). However, with the help of transdisciplinary educational concepts and formats, of which this paper is a part, it can be possible to set standards. Transdisciplinarity and its research are not intended to be an exaggerated solution option for all the challenges that need to be differentiated, but to continue to rub up against obviousness and thoroughly established interpretations. One important aspect of transdisciplinarity is its focus on the relationships between human and the world and space as dealt with. This includes not only the interactions between humans and the natural environment, but also the social, cultural, and economic systems that shape and are shaped by these interactions. By considering these relationships from multiple disciplinary perspectives, transdisciplinarity allows for a more comprehensive and nuanced understanding of the complex issues that arise in these contexts. One consequence of this is the sharpening of attention to, for example, a new interface for a new scientific and social perspective and this corresponds to the work on transdisciplinary contexts of institutional and integrative research (Geels, 2022; Renn, 2021; Scholz et al., 2021; Wuelser et al., 2021; Nicolescu, 2002; Mittelstraß, 2003).

7.5 Critical Reflection

This critical reflection refers to the Collective for Space Relations (CoSR) and its positions regarding their subjective articulations, the developed explanations in this paper, and their compiled substrates. Recognizing changes in our society and discussing them consciously is a challenge that requires incorporating real life circumstances. Therefore, this paper can only be a small part of the whole, and the authors are aware that a reference to the whole describes a hegemonic act. The better it succeeds in explaining and addressing the surrounding issues transparently, the more it can stimulate an inclusive discourse in form of a dialogue. CoSR is well aware that such an intention may involve a contemporary presumption and asks all readers to understand such a statement not as a retreat from responsibility for discourse but as a conscious self-reflective action and the adoption of such an attitude if necessary. In particular, we refer to our own role as western-socialized, non-marginalized academics and facilitators. The presented projects are still prototypes that rely on being adopted and experimented with further. The selection of the preceding topics is of great importance to CoSR but is dialectically not mandatory. Nevertheless, it can be

understood as a contribution to the current academic discourse on the transformation of higher education in Germany. For these and many other reasons, no claim can be made to completeness.

7.6 Conclusion

When and why does it happen that a person begins to hope for miracles? The writing inspires hope in CoSR that the desire for miracles can be a driving force to cultivate relationships that value different perspectives as a resource and create spaces of experimentation. Patience is necessary to wait for the moment when a miracle, so to speak, occurs. How can we reach people in a way that does not require a miracle now? According to this paper, miracles do not happen on the outside, but on the inside, in regard to a change of perception consciousness. The miracle is therefore a deeply active process that concerns the cultivation one´s own attitude and the different levels of relationships. Miracles might happen in a space made available for this purpose or simply by making these available. Vehicles create change as soon as it is possible to get in touch with one's own consciousness so that it can realign itself constructively (as a learning experience) and not through dogmatism.

This paper is meant to inspire experimentation in this regard. Universities have an institutional mission, which includes education for training purposes. This applies to practical as well as theoretical references, which, individually written, invite us to engage in a generally valid value chain. However, this is by no means the same as the idea presented by Sloterdjik (1989) in the introduction. The social integration through educational concepts occurs with reference to an assumed freedom, as described at the beginning, but only after the hurdle (access barrier) has been overcome as flawlessly as possible. Qualities and selection criteria regulate access to universities and thus require a civilizational, unquestioned adaptation.

However, how imaginable are studies at the university that are no longer solely measurable by numbers, but that help participants to cultivate relationships in safe enough spaces that strengthen and motivate future-oriented action? For an inner world: from fear and lack, from the feeling of not being good enough, or from all the stories on underperformance – up to love – there is hardly any or no space, yet they make up a large part of human experience and remain conceptually underdeveloped.

Our generation is not the first, and probably not the last, to grapple with urgent questions of wicked problems. However, it may be the generation that is

called upon, more than any other before, to recognise the planet as our most sacred space. This paper therefore addresses the pressing question of how to care for the earth and to navigate through wicked problems. In order to address students as change agents, "we need a cultural and spiritual transformation. And we scientists don't know how to do that." (Speth, 2015 cited by Oram, 2016: 40). By referring to inner transformation processes, a definition of learning in terms of uncovering what is already present in learners is desirable.

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