Meeting the challenges of global change: the significance of cultural questions to Education for Sustainable Development

Verena Holz
Leuphana University Lüneburg (Germany)

Introduction

The paper outlines specific challenges to the concept of Education for Sustainable Development (ESD) and possible strategies to meet them on the basis of an exemplary cooperation project.

The challenges concern the (1) sensitivity of people in terms of global change and (2) the implementation of future-oriented ways of life including participation competences to shape a sustainable society. A case study of the German Federal Office for Environment shows: most Germans know the current major problems of global change but this knowledge has no consequences for their daily life. (*Umweltbundesamt* 2008) It seems that knowledge about future scenarios is not necessarily transferred in rational behaviour and courses of action – an issue that has to be considered also by education concepts. Stoltenberg and de Haan emphasize: ESD has to break new grounds to meet with challenges of future life. (Stoltenberg 2001; de Haan 2002)

Against the background of the implementation process of ESD the particular research interest of this paper consists in using art as a supporting element in the learning process and aesthetic approaches as involvement for further occupation with the subject of Sustainability. The object of investigation is a transdisciplinary cooperation project that connects artists, teachers, university staff, children, students, parents and other involved persons.

The cooperation project and theoretical concerns both focus on what constitute an adequate learning environment for ESD in a primary school. Who is participating in what kind of matter in this process? The paper describes key factors and milestones concerning the cooperation project as an approach to new, transdisciplinary education paradigms. In my methodological approach I will discuss the concept of transdisciplinary research and its function regarding Sustainable Development. The paper closes with the outline of a further research interests based on the first results of the transdisciplinary research project.

Dimensions and goals of Sustainable Development and Education for Sustainable development: the context of a transdisciplinary research and cooperation project

1. Sustainable Development

Global change is the origin and inducement for Sustainable Development, conjoining our presence with our future. It challenges all people as stakeholders with different functions on various social layers: e.g. consumers, teachers, entrepreneurs, politicians

but also persons whose existence is threatened immediately by the impact of global change. Issues of equitable allocation of resources to contemporary and future generations as well as strategies of implementation of sustainable lifestyles are debated in the context of Sustainable Development. The development process is sufficiently complex – it connects different cycles concerning human and non-human life of different dimensions (e.g. economic, social, ecological, cultural, political, technical) within ethical parameters and fault-tolerant visions of our future. (*Agenda 21*)

In contrast to the 'daily-life perception' of many people, Sustainable Development isn't another wording for a concept to cope with environmental challenges. It rather centralizes anthropogenic global problems that have ecologic, economic, social, cultural and political consequences. The international discourse on Sustainable Development points out the significance of cultural questions and phenomena within the process:
The first principle of the '*Action Plan on Cultural Policies for Developmen*t' adopted by the UNESCO in 1998 says that: 'Sustainable Development and the flourishing of culture are interdependent.' (UNESCO 1998)

German Government specifies this statement:
Sustainable Development is not only the technocratic way of an efficient economy, eco-friendly production and healthy life. Technical innovations are essential, but not sufficient as moving power for Sustainable Development. Sustainable Development is concerned with a vision of how we want to live in future – with imagination and creativity. In this spirit it is a task of shaping and creating, based on values, social models and our cultural tradition challenging creative potentials of society. (…) It requests to change trails. (German Government 2002)

This citation displays that typical single approaches to global change represented by genuine professional areas (e.g. environmental engineering) have become obsolete in support of integrative approaches. What kind of function takes education as constructive authority in the context of those transdisciplinary paradigms of development?

2. The Role of Education

At first it seems essential to point out that Education for Sustainable Development differs from Sustainable Development as political process in its self-conception. ESD can be understood as a cross-social learning-, alteration- and negotiation-process. (Stoltenberg 2006) That implies controversial discussion and the act of formulating different positions within a normative framework as basic principles. Hence ESD should not be interpreted as a system of rules with concrete targets (e.g. 'waste separation in schools') but rather as space of options and experiment. Thereby it seems important to connect the ecological sphere with others to clarify the holistic extension of Sustainable Development. The objectives of ESD concentrate on: Empowerment to participation, envisioning future, systemic thinking, reflection and cooperation. (Tilbury et al. 2002) As to its practical application – particularly in the German non-formal education sector the idea behind ESD is analogous to the perception of Sustainable Development often mixed up with former concepts of Environmental Education. (Rode/Wendler 2009) How to deal with this problem? Stoltenberg suggests a four-dimensional analytical framework

to deconstruct current arrangements and comprehend interferences as well as the integration of cultural, economic, ecologic and societal processes. Beside specific learning and working methods, factual and procedural knowledge facilitate people to participate in the application process of Sustainable Development. (Stoltenberg 2009) It corresponds to the goals of the United Nations Decade of Education for Sustainable Development. The concept emphasizes potentials of shaping society and participation encouraging new approaches, methods and forms of knowledge.

Art and Education for Sustainability: Project 'Growing sculpture. Heiligengeistschule Lüneburg'.[1]

The postulation of the UNESCO and German Government to integrate culture and establish new forms of access to global change, was strengthened by the *'Tutzinger Manifest'* 2002. It claimed explicitly to integrate persons engaged in the cultural sector like artists or cultural managers due to their ability to bring the vision of Sustainability to life – via ideas, visions and existential experience. As they have the idiosyncratic knowledge about symbols, rituals und practices that can be imparted to a multitude of people. Also Dielemann indicated the significance of artists as key change agents and Kurt and Steinmann outlined the specific forms of questions that art formulates with regarding society. (Dielemann 2007; Kurt 2002) These debates contextualize the initiative of the cooperation project 'Growing Sculpture. *Heiligengeistschule Lüneburg'*.

Against the background of the image that primary schools can be seen as greenhouses for our future, discrepancies of quality enhancement with ailing school buildings, the lack of financing, social and cross-cultural conflicts and political demands are revealed. These Problems affect likewise the daily school life at *Heiligengeist* School *Lüneburg*.

The Swiss artist George Steinmann traditionally dedicates his work to questions of Sustainability, ecology and future orientation. His comprehension of art and the spirit of his work are influenced by a specific bond to nature and its aesthetics – spiritually charged, partial by residencies with people living closed to nature, like Native Americans or the Komi. With his work he doesn't only pick out Sustainable Development as a central theme, his projects also contribute to Sustainable Development. E.g. with the installation of a bridge and a refuge[2] in a very poor region in Bernese *Oberland* (Switzerland) he sensitized local people to re-value the natural, cultural and social richness of their landscape. Simultaneously he opened the region to eco-tourism (hiking only), which enhanced the economical status of the community of *Saxeten*. (Steinmann 2006)

Considering the precarious situation in primary schools as well as the Sustainability initiative at Leuphana University of Lüneburg[3], George Steinman instigated a cooperation process with the Institute for Integrative Studies[4] and the und.Institute Berlin. The project started in February 2009.[5]

It was guided by the following questions:

> What kind of education and working contexts qualify our children and us as teachers, artists and academic staff for future living?

How can Sustainable Development be experienced and how do we define its role in school education?
What are the basic principles regarding the implementation of ESD?
What are the results of the aesthetic analysis regarding the school building, learning environment and socio-cultural processes? What impact has the environment on learning processes? How can they be replenished through other perspectives?
How can people be sensitized to their school environment?

How can different groups of people get involved in this learning-, alteration- and negotiation process?
Objectives:

From the visual/public arts perspective: Creation and construction of new rooms at *Heiligengeist* School under sustainable und aesthetic aspects and methods. (Architectural intervention)
From the social perspective: Creation of social innovations. That means to redefine social structures, relationships and fields of responsibility – perceiving school as social organism.
From the scientific perspective: Implementation of Education for Sustainable Development by a parallel education program for teachers, students and pupils and lead back process experiences to scientific conceptions regarding the implementation of ESD.
From a general point of view: Conceived as an art project, the cooperation is supposed to attract people like teachers, parents, children, politicians and local stakeholders. Secondly, the instigation of a public dialogue about innovative forms of education and the role of aesthetic and sensual issues concerning approaches and the learning environment should be activated.

3. Methodology

Transdisciplinarity

The theoretical and methodological objective from a scientific perspective lies in the advancement of future-oriented education concepts. Results of the exchange run in the enhancement of settings, methods and content of education in the context of Sustainable development. Methods of developing theory can be characterized in cyclical processes, which on the one hand generate practice-changing theory and on the other hand feed back theory-changing practical experience. Strauss describes the procedure primarily as exploring and designing rather than examining and approving. (Strauss 1996/Kehrbaum 2009).

In inter- and transdisciplinary organized education process, experts are respected as partners within a common project and adequately perceived. Transdisciplinarity thereby aims to create new structures of knowledge and methods (Brand 2000). The question of perspective takes an active place in this process. An artist or social scientist for instance identifies different coherencies than a medical scientist, economist or biologist. By this means different forms of experience, cognitive structures and knowledge exist – each of them relevant in terms of global change. Godemann differentiates disciplinary

perspectives in opinions, attitudes and values that are based on particular assets of knowledge and empirical experience – a complexity, which has to be taken into account in communication processes. She also points out the asymmetry of knowledge and power divide in those situations.

Next to the integration of knowledge the following aspects play a decisive role in transdiscplinary projects:

> Communication
> Coordination of tasks and processes
> Creation of a common base of knowledge
> Disciplinary self-reflexion

(Godemann 2007)

It seems evident that transdisciplinary learning processes in the context of ESD have little in common with teacher-centred models of instruction. Following a constructivist interpretation of the learning process and focussing on key questions of society like the phenomena of global change as inducement, it appears important to allocate sufficient materials and possibilities for further learning.[6]

Grounded Theory and social Innovation Research

Transdisciplinary research processes can be contextualized theoretically and methodologically in contemporary paradigms of social sciences. Stoltenberg points out, that 'the self-perception of education in contexts of Sustainable Development involves consequences on contents, methods and organisation processes' and suggests to include approaches of innovation research in social sciences, inasmuch Sustainability can be perceived as concept of social innovation. (Stoltenberg 2006) In this context research e.g. asks for conditions regarding the alteration of learning processes and educational institutions as well as other societal stakeholders. It concentrates on a complex social reality that has to deal with linguistically imparted cohesions of action and meaning as well as conceptions of reality. (Legewie 1996)

As for the methodology of the evaluation process in transdisciplinary research Grounded Theory can be considered as adequate approach as it is located traditionally in principles of pragmatism philosophy. Its procedural research logic is based on the complementing antagonism of theory and practice, which generates forms of contingent knowledge. (Jonas 1992/Kehrbaum 2009)

Single social sub-processes (workshops) have been described and analyzed methodologically by Participant Observation. (Friedrichs & Lüdtke 1973)

4. Results

As this transdisciplinary, process-oriented research project implies a complex output; I will outline major milestones, key factors and observation results of the implementation in the primary school.

Key principles and cooperation procedures:

- Cooperation Partners: George Steinmann (Swiss artist); Dr. Hildegard Kurt (curator, artist, cultural scientist); Institute for Integrative Studies (represented by Prof. Dr. Ute Stoltenberg, Verena Holz); Teaching staff at *Heiligengeistschule Lüneburg.*
- According to the open conception of Sustainable Development a strategic and aesthetic approach consisted in the indeterminacy of the process. Against the advice of transdisciplinary research, working fields were appointed but no concrete vision concerning results and further development existed. This principle was explicitly intended by the artist in order reduce a dominant impact from one perspective. It also determined the working process in the student seminars.
  Likewise the name 'Growing Sculpture' suggests an adequate form of development and growth of all constitutive elements as alternative draft to economical growth. The idea and conception of the 'Growing Sculpture' traces back to Beuys concept of 'Social Sculpture'. It implies a political dimension to art as impetus for social change.
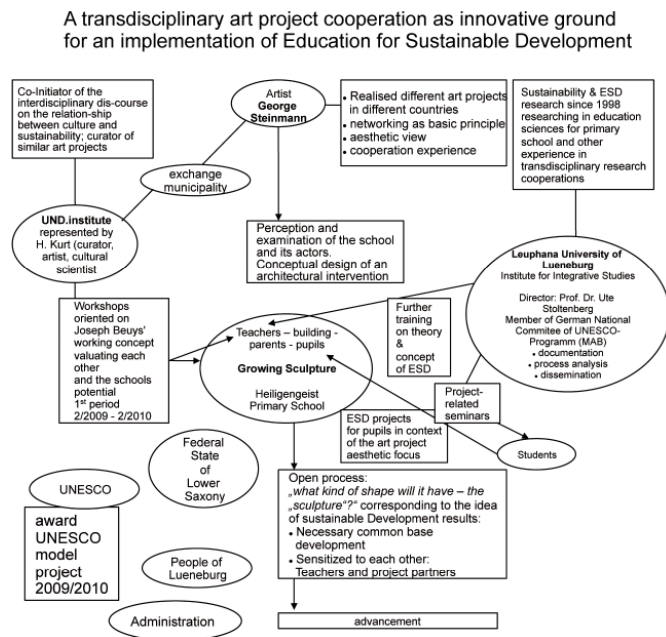- Due to the lack of a concrete prediction of results a communication of the idea in the first months after the project launch turned out to be complex and difficult to retrace by people who had no experience with art projects.
- It was astonishing to observe, that the primary school teachers who – following Bourdieu's theory and results of our Participant Observation – who have at least in a cross sectional view different perceptions and comprehension of art and its functions from the artist, were highly motivated by his vision and project presentation. The engagement and identification with the project of the teaching staff retained during the whole period, even if the planned architectural intervention was financially not ensured.
- Participation: the artists were involving teachers in their findings about ecological, social and aesthetic problems and potentials in *Heiligengeist* School at nearly any time. They asked pupils, parents and teachers for their perception of problems.
- Teachers report that via the art process they feel 'perceived and appreciated' in their function and situation.
- Taking into account the complexity of the project, it is evident, that pupils don't have a concrete idea of the alteration process in their school at the end of period I. Nevertheless they were involved indirectly in the ESD projects created by the students. For instance, the children copied working methods of George Steinmann by producing watercolours from fruits and vegetables to paint with. In another activity they picked out classroom atmosphere as a central theme and combined it with global learning contents like 'how do children learn at school from other parts in the world'.

Measures and achievements during the first period (February 2009 – February 2010):

- Lectures on Education for Sustainable Development and its implementation in school curricula and classes (for teaching staff at *Heiligengeist* School *Lüneburg*)

- Student seminars in context of the project with the objective to develop and realize two ESD projects
- Realization of two ESD projects at *Heiligengeist* School with Students and a 2nd and two 3rd classes
- Workshops for teachers and parents of *Heiligengeist* School *Lüneburg*
- Examination of the social, cultural and territorial environment; conceptual design of the architectural intervention by George Steinmann; scale models
- Transdisciplinary exchange of all cooperation partners within regular meetings
- Involvement of local press, local and federal state politicians as well as municipality and parents
- Networking: The artist was invited to conferences in order to point out the meaning of art and Sustainable Development in regional contexts. Furthermore the project was awarded as 'UNESCO Decade Project 2009/2010'.

The graphic chart below gives an overview of the cooperation process and further prospects.

A transdisciplinary art project cooperation as innovative ground for an implementation of Education for Sustainable Development

2nd Period 8/2010 – 08/2011
- architectural & aesthetic alteration: new rooms & buildings
- implementation of BNE in classroom concepts
- aesthetic as communication principle
- opening the institution: school as regional centre for ESD
- institutional quality enhancement
- reinforce cooperation with regional partners
- model project

5. Conclusion

From a methodological point of view the observation, participation and documentation of such a process contains a range of challenges, e.g. the artist's vocabulary of describing processes differs from the scientific terminology of humanities and its cognitive structures, which may result in methodological problems. Therefore it could be of a further interest to examine the role of language in the transdiciplinary research process.

Considering the implementation of ESD in an environment, where there seemed to be no capacity for conceptual reflexion, such aesthetic and transdisciplinary forms of access with detailed, close perception of social processes turned out to be a qualified approach. Taking into account that mind-changing procedures require a particular duration, such methods of revaluating and respecting an adequate growth of social processes seem to have a high impact. At the end of period I the project found a footing to further common work with concrete prospects like the architectural intervention and the creation of a locality to enhance regional learning processes in the context of Education for Sustainable Development and establish forms of innovative an future-oriented learning. The next step of research could consist in a qualitative interviewing process of all cooperation partners and participating students to investigate the impact of this particular approach to the perception and willingness to deal with Sustainable Development.

References

Bundesregierung (Ed.) (2002) Perspektiven für Deutschland. Unsere Strategie für eine nachhaltige Entwicklung

Brand, K.-W. (Ed.) (2000) Nachhaltige Entwicklung und Transdisziplinarität. Besonderheiten, Probleme und Erfordernisse der Nachhaltigkeitsforschung. Berlin: Analytica-Verlag

Dielemann, H. (2008): Sustainability, Art and Reflexivity: why artists and designers may become key change agents in sustainability. In: Kagan, S. & Kirchberg, V. (Eds.) (2008): Sustainability: a new frontier for the arts and cultures. Frankfurt am Main: VAS – Verlag für akademische Schriften, pp 108 – 146

Friedrichs, J. & Lüdtke, H. (1973): Teilnehmende Beobachtung. Einführung in die sozialwissenschaftliche Feldforschung. Weinheim, Basel: Beltz-Verlag

Godemann, J. (2007): Verständigung als Basis inter- und transdisziplinärer Zusammenarbeit. In: Michelsen, G. & Godemann, J. (Eds.): Handbuch Nachhaltigkeitskommunikation. München: Oekom, pp 86 – 96

Haan, G. de (2002): Die Kernthemen der Bildung für eine nachhaltige Entwicklung. In: ZEP – Zeitschrift für internationale Bildungsforschung und Entwicklungspädagogik, 25, 1, pp 13-20

Jonas, H. (1992): *Pragmatismus und Gesellschaftstheorie*. Frankfurt a. M.: Suhrkamp

Kagan, S. & Kirchberg, V. (Eds.) (2008): *Sustainability: a new frontier for the arts and cultures.* Frankfurt am Main: VAS – Verlag für akademische Schriften

Kehrbaum, T. (2009): Innovation als sozialer Prozess: die Grounded Theory als Methodologie und Praxis der Innovationsforschung. Wiesbaden: VS Verlag für Sozialwissenschaften

Konferenz der Vereinten Nationen für Umwelt und Entwicklung (1992): Agenda 21. Rio de Janeiro

Klafki, W. (1976): Aspekte kritisch-konstruktiver Erziehungswissenschaft. Weinheim [u.a.]: Beltz-Verlag

Kurt, H. & Wagner, B. (Eds.) (2002): Kultur – Kunst – Nachhaltigkeit. Die Bedeutung von Kultur für das Leitbild nachhaltige Entwicklung. Bonn u. a.

Legewie, H. (1996): Preface. In: Strauss, A. & Corbin, J. (Eds.): *Grounded theory: Grundlagen qualitativer Sozialforschung.* Weinheim : Beltz, Psychologie Verl.-Union

Rode, H. & Wendler, M. (2009): 'Früher nannten wir es Umwelterziehung'. Kommentierte Grundauszählung zur quantitativen Befragung zur außerschulischen BNE – ausgewählte Ergebnisse

Steinmann, G. (Ed.) (2006): *Das Werk Saxeten: eine wachsende Skulptur von George Steinmann*; 2002 - 2006; [ein Kunst- und Bauprojekt des Kantons Bern]. Bern, Bahnhöheweg 92: G. Steinmann

Stoltenberg, U. (2001): Diskurs über Nachhaltigkeit als Herausforderung für Disziplinen zur ethischen Vergewisserung – konkretisiert am Bereich der Erziehungswissenschaften. In: Altner, G., Michelsen, G. (Eds.): Ethik und Nachhaltigkeit. Frankfurt a. M: VAS – Verlag für akademische Schriften, pp 222 – 238

Stoltenberg, Ute (2006): *Innovationsforschung.* In: Rieß, W. & Apel, H. (Ed.): *Bildung für eine nachhaltige Entwicklung. Aktuelle Forschungsfelder und -ansätze.* Wiesbaden: VS Verlag für Sozialwissenschaften, pp 81 – 86

Stoltenberg, Ute (2009): Mensch und Wald. Theorie und Praxis einer Bildung für nachhaltige Entwicklung am Beispiel des Themenfeldes Wald. München: oekom Verlag

Strauss, A. & Corbin, J. (Eds.) (1996): *Grounded theory: Grundlagen qualitativer Sozialforschung.* Weinheim: Beltz, Psychologie Verl.-Union.

Tilbury, D. et al. (Eds.) (2002): *Education and sustainability: responding to the global challenge.* Cambridge [u.a.]: IUCN Commission on Education and Communication.

UNESCO (1998): The Stockholm Conference 30 March-2 April 1998. Action Plan on Cultural Policies for Development;

portal.unesco.org/culture/.../12290888881stockholm.../stockholm_actionplan_rec_en.pdf (18th April 2010)

Internet Sources:

http://www.george-steinmann.ch/15saxeten.html (18th April 2010)

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[1] *Heiligengeistschule* is the name of the cooperating primary school in the German city of *Lüneburg*.
[2] Both the bridge and the refuge are made from ecological materials and stand out due to specific aesthetics in terms of the contemplative ambience of the locality. http://www.george-steinmann.ch/15saxeten.html (18th April 2010).
[33] Leuphana University of Lüneburg, represented by Gerd Michelsen and the Institute of Environmental & Sustainability Communication, is housing the UNESCO Chair of Higher Education.
[4] The Institute for Integrative Studies at Leuphana University of Lüneburg dedicates its research to ESD in elementary school, kindergartens, secondary school systems and further education with regional cooperation partners.
[5] The first period of the project (February 2009 – February 2010) was funded by *Altner-Combecher* foundation for ecology and peace. A second period is being launched at the moment.
[6] 'Education', understood under a critical constructivist perspective, means especially the individual and little influenceable process of acquiring knowledge and developing specific skills in a well-prepared learning setting. See also Klafki 1976.