Super Food!? The Potential of Inter- and Transdisciplinary Labs at the Intersection of Art and Science in Schools

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Abstract

Currently, humans consume the resources of two planets, far exceeding the limits of the one earth we have. Climate researchers speak of a "planetary emergency" and call for rigorous measures to counteract the irreversible effects of climate change [1]. This requires social change at all levels [2]. Without question, there is not much time left in the current climate crisis to move from knowledge to action.

But how do we inspire action on the climate crisis and initiate processes of transformation towards a future worth living? What are the implications for teaching in schools in this context? What is the potential of artistic practices and what role can artistic education play here? And to what extent are experimental, interdisciplinary and transdisciplinary settings useful? These questions will be addressed both theoretically and practically in our paper.

The basis for our paper is the research project "Spaces of Cultural Democracy," which is a cooperation between the Inter-University Organization Science & Arts (Paris Lodron University Salzburg/Mozarteum University Salzburg) and the Salzburg Museum. As a part of this project, a transdisciplinary team consisting of researchers, teachers, students and artists from different "disciplines" have developed concepts and materials for artistic and scientific laboratories in various contexts. These concepts and materials were tested at an Austrian high school from April to June 2022 by about 35 students between the ages of 16 and 18. Within these laboratories, the students have the possibility of engaging experimentally with questions surrounding the topic of sustainable nutrition from both an artistic and a scientific perspective. The students' work processes are supported by observation, audio logs, interviews and open questionnaires. In our paper, we take up this interdisciplinary project, entitled "Stories with a Future. Super food!?," as an example, give insights into the working processes and reflect on it in light of the aforementioned questions.

Keywords: *spaces of cultural democracy, climate crises, sustainable nutrition, artistic-scientific laboratories, significance of artistic practices*

1. Introduction

Sustainable development requires comprehensive social transformations [1]. We need to "rethink our world" [3], according to transformation researcher Maja Göpel. Educational institutions play a central role in this context. For schools, in addition to a socioecological transformation on the institutional level, this also means continuously integrating the socially urgent issues and challenges we are confronted with – in the sense of transformative education – explicitly or implicitly into the lessons and sensitizing the students to their complexity and interconnectedness [4]. The aim is to empower them to think and act for a future worth living for everyone.

To achieve this it is necessary to anchor the issue of sustainable development in the general curricula of all types of schools in Austria, as well as the desideratum of education for sustainable development as an action-guiding concept for the design of lesson plans across all subjects [5]. There are also several different points of contact in the subject-specific curricula where socially relevant topics can be taken up in order to build bridges between and across subjects: In the field of the arts, it is first and foremost artistic and creative practices that, in our opinion, offer the opportunity to "become acquainted with different forms of reflective interaction with the world" [6, p. 143] and with

that, a transformative potential. These can open up spaces of experience that foster a “sense of possibility” [7, p. 29] in which alternative viewpoints and perspectives become visible. In the sense of “creating as re-creating” [8, p. 19], they can help to question and break down routines of perception and action. Consequently, in the context of artistic design processes – according to our thesis – spaces of experience can be opened that can be of particular importance for dealing with current and future-related topics and challenges as well as for developing skills and strategies to meet these challenges and “shape” change.

But what specific implications should such experiential spaces in school contexts have in terms of content, methods and structural framework? And to what extent can and should science and art work together in this context? Against the background of these questions, we developed the project “Stories with a Future: Super Food!?,” [9], which we implemented in May and June 2022 with 35 students between the ages of 16 and 18. In this paper, we provide in a condensed form insights into this project and reflect on it in light of these explicit questions and theses.

2. “Stories with a Future: Super Food!?”

2.1 Interdisciplinary and Transdisciplinary Experimental Spaces as Experiential Spaces at the Intersection of Science, Art and Socially Pressing Issues

Since there is no one “right” way to a sustainable future, we understand – following the educationalist Klaus Seitz – that the change towards a sustainable society will be a “knowledge-based, open-ended social search process” [10, p. 9], which relies on the “broad participation of people and their creative potentials” [10, p. 9] and "on individual as well as social learning” [10, p. 9]. Consequently, the opening of experiential spaces in school contexts requires specific implications that guided us in the conception of “Stories with a Future: Super Food!?”:

- They should be characterized by processuality, an action orientation and an openness to results. These are aspects that decisively characterize experimental actions.
- They should be based on scientific findings that are able to illuminate the social challenge(s) in their complexity, and consequentially from the perspectives of different disciplines.
- They should incorporate the knowledge and experiences of different social actors, including the learners themselves, with their various perspectives – thus, they should be transdisciplinary.

Against this background, in the “Stories with a Future: Super Food!?” project, we opened up interdisciplinary and transdisciplinary experimental spaces as experiential spaces in which learners are able to engage in experimentation and creative activities and “identify” various contents, skills, abilities and attitudes on their own – and incorporate them into their own life worlds. The thematic focus was on sustainable nutrition. Specifically, the following question formed the anchor point of the content: What aspects contribute to the fact that we produce and consume “super food” in the truest sense of the word (not as it is conventionally used, mostly for marketing purposes), which is not only healthy and tasty for all people, but also “super” in ecological and economic terms?

Already in the preparation phase, in the course of developing the teaching and learning arrangements, we worked with an interdisciplinary and transdisciplinary team consisting of teachers from different subjects, as well as artists, scientists and everyday experts, in order to include as many different perspectives on the question as possible. Various formats and methods were developed, each with experimentation as the central action principle: mysteries, inquiry-based learning formats, role-playing and embodiment games as well as creative writing and design stimuli are all employed to consider the topic of sustainable nutrition in relation to, for example, climate change, the rising world population and social justice. The “sustainable development goals” served as reference points for the selection of aspects.

The implementation of these formats and materials then unfolded in two phases: In the first phase, the project took place in conjunction with the regularly scheduled lessons. In this phase, the students developed their own individual questions in relation to the project topic on the basis of their artistic and scientific experiments and discussions. In the second phase, they approached these questions in an experimental and creative way within the framework of project days, with the support of artists from various disciplines and local pioneers of change.

2.2 Creating and Telling Stories as a Way to Open New Spaces of Experience

The goal of these artistic and creative explorations is to guide and support the students in creating and telling their individual stories about a diet “with a future.” The idea of establishing settings that enable the learners to do so is based on our conviction that, in particular, the creation and telling of stories that point to a desirable future can open up new spaces of experience. Furthermore, the stories “with a future” that emerge from these development processes have a mediating potential: They can inspire the recipients to learn from one another, to take action themselves and to write and live “their own” stories “with a future,” so to speak. In fact, mini-reports, poetry slams, songs and photo series were created that can tell stories about a diet “with a future,” serve as sources of inspiration and/or stimulate reflection.

3. Conclusion

Currently, this is an initial pilot project. Using open questionnaires, memory protocols based on participant observation and short interviews, the entire project process was supported scientifically from the perspectives of all of the persons involved – including the students themselves. Now in its final phase, the collected data will be evaluated over the coming weeks to continue to develop it further in follow-up projects. One of the medium-term goals of this research is to publish the resulting lesson plans and materials in an open-access format. At the same time, it is important to explore how the long-term, interdisciplinary implementation of socially urgent topics can take place in everyday school life and what specific experiential possibilities the students have in the experimental, artistic and scientific examination of such topics. What is already clearly recognizable for us at this point is that continuous cooperation with partners beyond the school (in the sense of opening up the school

as an institution) has proven to be of great benefit. They make it possible to get closer to the students' life worlds while at the same time making different perspectives more "tangible."

We have also seen a confirmation of our thesis that it is central to set up the experiential spaces as open-ended, process-oriented spaces of "investigation" – as experimental spaces – in which the students have the opportunity to develop their own research questions and experiment designs, taking into account their previous experiences and urgencies as well as the knowledge and skills acquired in the process. At the same time, there is a need for continuous reflection and support from teachers, scientists and artists; otherwise, these open processes can be very overwhelming. It is therefore necessary to alternate between freedom/openness and guidance as needed in order to support the learners in the best possible way.

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