Learning ecological economics via a multi-actor knowledge co-creation process

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Short abstract

In the frame of an Ecological Economics field course we engaged grammar school and university students, teachers and scientists in a school gardening project, with the aim of better understanding how human-nature and human-human interactions change due to spending more active time in the school courtyard. The presentation offers insights into the structure and organization of the course and reflects on the key aspects of the learning process which involved all the four main actors. Practical challenges will also be shared, including expectations, time management, the roles of the course organizers, and performance evaluation.

Long abstract

The connection between ecosystem services (ES) and human health – including both physical and mental – is acknowledged and well-documented in the literature (Sandifer et al. 2015, Summers et al. 2012). Proven contributions to mental health via interactions with nature ranges from mediating ADHD to healing post-traumatic stress and slowing dementia, among others (Anderson et al., 2017; McCormick, 2017). Most ES classifications consider contributions to mental well-being as direct benefits of cultural ES (eg. CICES 2018). Although IPBES aims to incorporate holistic and reciprocal relationship between nature and people by framing ES as nature's contribution to people (NCP) (Díaz et al. 2018), most studies still focus on one side of this relationship – i.e. how nature heals us – and therefore imply an instrumental value approach (e.g. Buckley&Brough 2017). A personal research interest – *whether it is possible to realize relational and instrumental values of nature if an eco-psychological approach is applied to everyday human-nature interactions* – has been transformed into a university curriculum, and an Ecological Economics field course has been organized at the Human Ecology master program of the Eötvös Loránd University in Budapest. The major aim was to realize learning outcomes at multiple players, including university students, societal actors and the course organizers themselves, by creating a school gardening project where knowledge and knowledge holders are understood in the broadest sense. In this presentation we – a joint group of students and course organizers – briefly introduce the background of the course, share insights about its structure and organization, discuss major learning outcomes, and reflect upon the challenges faced.

The course emerged from previous research work of the course organizers, which focused on ecosystem services and green care services on one hand, and knowledge co-creation in the science shop model on the other. A major source of inspiration was the InSPIRES project – funded by the European Commission's Horizon 2020 "Science with and for Society" (SwafS) programme – which aims to narrow the gap between Society and Science by co-creating and implementing innovative Science Shop (SS) models that are inclusive, context relevant, culturally adapted, more accurate and responsive to civil society concerns. In the frame of these new models, InSPIRES partners facilitate collaborative research

projects aligned with the principles of Responsible Research and Innovation (RRI), Open Science (OS) and Impact Evaluation, especially focusing on health and environmental issues which are usually sidelined in the current SS research agenda, yet can be addressed effectively by strengthening the communities' voices and developing the conditions for a participatory dialogue and a true knowledge sharing.

The course has a strong original focus on research practice as it is a field course enabling students to experiment with and reflect on various methods. In the fall semester of 2018, however, the course gained some novel aspects. University students were invited to an action research setting: a school garden was established in a grammar school near Budapest by teachers, pupils (aged between 14-15) and course organizers, and university students could get engaged in and observe the project to better understand how the time spent in the school garden influenced human-nature and human-human interactions within the class. The course offered some theoretical and methodological background to students, including ecosystem services, plural values, diverse tools for ES valuation, and doing research with children. After the introductory block, students had to create and implement their own research plan in small groups (3 or 4 students in one group), choosing their method from a predefined list including participatory observation, photovoice and environmental attitude assessment. Supervision, technical and methodological support, and several occasions for personal reflection were provided all along the process by the two course organizers. At the end of the semester a short research report summing up the main research findings, and a final presentation sharing the methodological lessons had to be prepared by the student groups, and the opportunity to present their findings in the grammar school was also offered to them.

Major learning outcomes, identified by the students, included the improvement of methodological knowledge (especially for photovoice), the increased sense of responsibility and freedom of choice in research, the experiences of teamwork, and the better navigation across generations (especially working with children). While the course organizers facilitated the learning process to reach some of these outcomes, it was the entire research environment and the amalgam of diverse actors which created a safe and trustworthy space where making mistakes (and correcting them) was acceptable and learning from each other could have happened. Learning points for course organizers were equally diverse. Important, and often hidden aspects of the used methods were discovered, and rough ideas about how a school garden can improve human-nature and human-human interactions were collected and refined by the help of the students. At a more personal level, handling uncertainty and control, learning about interpersonal dynamics, and giving and receiving feedback were the crucial points where course organizers could advance their own skills. A follow-up research is planned for the spring semester to identify learning outcomes for school teachers and pupils.

Among the challenges we faced during the semester, the most important were the time and expectation management. Time was frequently considered a limiting factor: activities in the school garden had to be suited to the class curriculum, research done by the students had to be scheduled in accordance with the class curriculum and had to adapt to other courses of the students, time allocated for theory, methodology, empirical research and reflection had to be balanced etc. This required an increased flexibility in terms of course organization. Despite expectations were high from both sides, getting the university students engaged in closely monitoring the impacts of the school garden was hard to achieve, because the course lasted only for one semester while the school gardening project expands to the whole school year. Time management and expectation management finally intermingled, and course organizers had to find a balance between asking and offering more commitment.

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