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Open Schooling about Sustainability Issues: Disturbance and Transformation of Teaching Habits

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This paper presentation addresses the implementation of environmental and sustainability education (ESE) through 'open schooling': education practices where schools, in cooperation with other stakeholders, contribute to community wellbeing and sustainability. We focus on open schooling practices in Belgium - as part of the Horizon2020 project SEAS - that aim to organise teaching and learning in a way that allows students to engage in identifying, exploring and tackling key sustainability problems in their communities. We investigate how schools implement open schooling through the LORET (Locally Relevant Teaching) methodology (Östman et al. 2013) that offers teacher teams a step-by-step procedure to plan locally relevant sustainable development teaching that is adapted to local needs/conditions while, all the same, allows to teach subject knowledge and realise curriculum objectives.

The analysis focuses on ESE educators' professional development and, in particular, on how LORET challenges established teaching habits and routines and how it may result in a transformation of customary manners of teaching. Guided by the transactional theory of sustainability learning elaborated below, we address the following research questions:

1. In which ways does the implementation of LORET disturb the professional habits of teachers?
2. In which ways does the implementation of LORET disturb collective customs in school teams?
3. In which ways does the implementation of LORET disturb the habits of non-school open schooling partners?
4. Under which conditions does this result in a positively evaluated consolidation, enrichment or transformation of habits and customs?
5. How do facilitators of the LORET methodology affect this?
6. How do participants learn from each other?

The theoretical framework that underpins our study is a transactional theory on sustainability learning (Östman et al. 2019) based on the pragmatist work of John Dewey (1916, 1938). This theory understands learning as being incited by a 'problematic situation' in which our habitual ways of acting and coordinating with the surroundings are disturbed. This is grounded in the pragmatist assumption that, in everyday life, we mainly act without reflecting. Reflection, and hence learning first starts when our environment disturbs such habits. Sometimes we can easily solve problematic situations with the help of existing habits. Learning then results in consolidating and enriching the habit. But sometimes the problem is harder to resolve and requires an 'inquiry'. Through experimentation one tries to solve the problem which results, if successful, in new knowledge, skills, values, identities, etc. Learning can in this case result in a substantial transformation of habits or even the start of a new habit.

Drawing on this theory, we investigate the professional development of educators in 'transaction' with a changing professional environment. A pragmatist perspective on human action emphasises that people, through their actions, constantly try to coordinate with the surrounding world in order to achieve goals or to adapt to changes in the surroundings. Doing so, they also change their environment. A pragmatist transactional approach thus understands learning in the context of sustainability challenges as a process in which both individuals and their environment transform reciprocally and simultaneously through engagement with problematic situations. The interplay – or, in Dewey and Bentley's (1949 – see also Ryan 2011) term, 'transaction' – between humans and the surrounding social/physical environment is thus seen as the engine for learning. As such, pragmatism's processual approach to the phases of habit, crisis and creativity that mark human action (Shilling 2008) offers a useful framework to investigate how the disturbance of teaching habits, incited by the introduction of a new open schooling methodology, may foster reflexive professional development and creative didactic innovation.

Methodology, Methods, Research Instruments or Sources Used

The empirical data consists of semi-structured interviews and transcripts of video/audio-recorded observations of workshops with teachers, principals and non-school partners. It is collected through an intensive action research process in three schools and an environmental education centre.

We analyse the transcripts of observations with an analytical method that is well-suited to investigate our research questions from a transactional perspective: Practical Epistemology Analysis (PEA). The method is created by Wickman and Östman (2002) and is designed to study how learning takes shape through individual-environment transactions. It enables a 'high-resolution' analysis of how learning – i.e. educators professional development and the transformation of teaching habits – takes place 'in action'. As such, it allows us to open-up the black box of a learning process and to trace the connections between this process and its outcomes. PEA starts from the transactional understanding of learning as the creation of relations between what stands fast for a person – previous experience (earlier acquired knowledge, skills, values, etc.) – and the new situation that s/he is encountering. If one manages to create a relation between those, one has used earlier experiences to make the new situation intelligible. If that does not happen, one cannot continue. Every time a person encounters a new situation, a gap occurs. If s/he bridges the gap by creating a relation to what stands fast, s/he person has learned something, i.e. s/he has developed an expanded and more specific repertoire for action. Often we bridge gaps immediately. Sometimes, however, the gap is too big – we see people hesitate, start to guess, ask for help, etc. – and becomes a trigger for inquiry. The learner then needs to stage new encounters to fill the gap, for example, with a book, a teacher, or peers. By analysing the created relations, we can investigate the content of what is learned. Analysing the encounters reveals how the learning was made possible. We combine PEA with Teacher Move Analysis to investigate the impact of interventions of facilitators on the direction of the participants' learning (question 5) and with Transactional Argumentation Analysis in order to reveal how people learn from each other in the workshops (question 6).

The interviews are interpretatively analysed. Sensitising concepts derived from the above elaborated transactional learning theory constitute the initial coding scheme. The analyses of interviews complements PEA in that it also provides insight in the participants' intentions, reflections and experiences that remain invisible in a PEA analysis.

Conclusions, Expected Outcomes or Findings

The paper presents the theoretical and analytical framework of ongoing research and illustrates it with preliminary findings based on the analysis of more than 10 workshops and more than 5 interviews. The expected outcomes are:

- the identification of different types of disturbances of the professional habits of teachers;
- the identification of different types of disturbances of collective customs in school teams;
- the identification of different types of disturbances of the habits of non-school open schooling partners;
- a mapping (typology) of different types of disturbances of teaching habits;

- key conditions for positively evaluated consolidation, enrichment or transformation of habits and customs (incl. regarding facilitator's interventions and collegial learning).

Our analyses contribute to progressing knowledge on important topics in the field of environmental and sustainability education (ESE) for example on how to handle the so-called 'democratic paradox' in ESE (Wals 2010; Læssøe 2007); how to design a teaching practice in which participants can relate to sustainability issues as a matter of concern and learn from sustainable citizenship-as-practice (Van Poeck & Vandenaabeele 2012; 2013) which unlocks unique educative potential that largely remains untapped in the mainstream education system (Van Poeck & Östman 2020); how to deal with the ethical, political and aesthetic dimension of sustainability issues in education (Lundegard et al. 2007; Östman 2010; Garrison et al. 2015).

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Intent of Publication

This paper will later on be developed into a scientific article for *Environmental Education Research*.