OPINION ESSAY

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Learning Our Way to Sustainability

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Abstract

Should environmental education (EE) and education for sustainable development (ESD) try to change students' behaviours or should it focus on capacity building and critical thinking? The latter is more likely to lead to a citizenry that can examine new challenges and act wisely. New forms of learning are entering the arena of EE and ESD such as 'social learning', learning by mirroring one's own ideas, views, values and perspectives with those of others, and 'transformative social learning', which requires the integrative switching back and forth among a set of mindsets. Four areas of research in new learning methods are identified.

CHANGE WE CAN BELIEVE IN AND BELIEFS WE CAN CHANGE

Critical questions asked in environmental education (EE) and education for sustainable development (ESD) are: What should we be changing in learners? and, How can we create optimal conditions and support mechanisms that allow learners to develop in the face of change?

The first question has 'instrumental' connotations, whereas the second has 'emancipatory' ones. At one extreme, education is expert driven (there is a strong sense of what is 'right,' what needs to be done and a high degree of confidence and certainty

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in both the current knowledge base and the kind of behaviour that is needed), while at the other extreme, education is process driven (where there is a strong sense of empowering, involving and engaging learners in issues that affect them and/or others, and less certainty about the current knowledge base and the kind of behaviour that is needed).

In earlier writings, Bob Jickling and I (Jickling and Wals 2008; Wals and Jickling 2002) referred to the instrumental perspective as one that could lead to 'big brother sustainability' or an 'eco-totalitarian regime', which may be sustainable from an ecological/environmental perspective but in which people may not be very happy. Working within the emancipatory regime, conversely, may result in 'grassroots sustainability' consisting of communities of empowered, engaged and competent citizens that may be happier but may not reach solutions that are sustainable from an ecological/environmental perspective.

One must be careful about using education as a tool to influence human behaviour in a particular direction because doing so contradicts the essence of education. Other tools (i.e. legislation, regulation, economic incentives or deterrents, fiscal policies but also overt persuasive communication and social marketing strategies) are more appropriate when using an instrumental perspective. However, the deeper the planetary sustainability crisis, the more tempting it is to adopt more instrumental approaches because people come to think that we are running out of time and need to act now. Yet the flight to instrumentalism might keep us from developing a more resilient society with a planetary conscience.

AN INSTRUMENTAL PERSPECTIVE

Around the world, environmental education has gained importance because of its potential to contribute to the resolution of environmental issues and not because of its potential to contribute to democratic human development (Wals et al. 1999). It can be argued that the environmental justification of environmental education has, at least until now, outweighed the pedagogical justification. This is also the case with ESD although some would argue that the sustainability focus of ESD assumes that issues of democracy, equity and participation 'automatically' come into play.

Much environmental education aims at changing learner behaviour, including attitudes, beliefs and values. Many environmental education researchers and practitioners try to structure environmental education by using hierarchical levels of universal goals and measurable learning outcomes (see for instance: Hungerford and Volk 1990). It is no surprise that within an environmental education that seeks to change 'learner behaviour', the establishment of knowledge and awareness of nature and environment, and the application of what is learned, are considered essential steps in the learning process. Evaluation of the achievement of these goals is considered crucial for determining the success of environmental education and, incidentally, for justifying government spending on EE.

Early EE was informed by insights from behaviourist socio-psychology that assumed a more or less linear causality between environmental awareness and environmental

behaviour (Fishbein and Azjen 1980). In other words: an increase in environmental awareness would lead to more responsible environmental behaviour. However, we have come to know that these models represent an oversimplification of reality and incorrectly assume a linear correlation between knowledge, awareness and behaviour (Hannigan 1995). Providing information, raising awareness and changing attitudes is not enough to change people's behaviours. People's environmental behaviours are far too complex and contextual to be captured by a simple causal model.

AN EMANCIPATORY PERSPECTIVE

Educators from the field of education raise other concerns. Educators, particularly those with a strong pedagogical background, challenge the focus of EE and ESD on behavioural change, arguing that education should above all focus on the kind of capacity building and critical thinking that will allow citizens to understand what is going on in society, to ask critical questions and to determine for themselves what needs to be done (Mayer and Tschapka 2008; Jickling and Wals 2008). The idea of influencing people's environmental behaviour in a predetermined way, they maintain, contradicts the very foundation of education and borders on indoctrination. More recently, this position has been supported by the uncertainty regarding what the most environmentally sustainable behaviours actually are, the recognition that there may be no universal answers, and the fact that insights and the knowledge base continuously shift in a post-modern and post-structural world. In other words, what may appear to be sustainable behaviour today may turn out to be unsustainable later in time (Wals 2007).

If a key function of education is fostering autonomous thinking about, among other things, environmental issues, then it would be contradictory to prescribe behavioural outcomes triggered by a learning activity or sequence of activities. Jickling (1992), for example, wrote in his provocative 'Why I don't want my children to be educated for sustainable development?' article that he would not want his children to be educated *for* sustainable development, because it goes against the idea of education: (*a*) it suggests that education then becomes *training,* the acquisition of skills and abilities, which has instrumental connotations and can technically occur through repetition and practice without leading to a meaningful understanding, (*b*) the concept of sustainable development is contested, which makes teaching *for* it doubtful at least, and (*c*) the prescription of a particular outlook conflicts with the development of autonomous thinking.

From an emancipatory perspective, EE and ESD have a role in developing learners' 'dynamic qualities' (Posch 1991) that allow them to critique, construct and act with a high degree of autonomy and self-determination. At the same time, good education also develops the competencies learners need to cope with uncertainty, poorly defined situations and conflicting or at least diverging norms, values, interests and reality constructions. Posch (p. 12) writes:

> Professional, public and private life has become increasingly complex, with divergent and even contradictory demands on the individual [who lives] within an increasingly

> pluralistic value system. Above all, it is necessary to look beyond everyday normalities and to search for ethically acceptable options for responsible action.

'Searching for ethically acceptable options for responsible action' is one of the things that sets education apart from training and conditioning and makes the prescription of particular lifestyles or (codes of) behaviour problematic. The training/instrumental approach stifles creativity, homogenises thinking, narrows choices and limits autonomous thinking and degrees of self-determination.

In summary, an instrumental approach assumes that a desired behavioural outcome of an environmental education activity is known, more or less agreed upon, and can be influenced by carefully designed interventions. Conversely, an emancipatory approach assumes that the dynamics of our world are such that citizens need to become engaged in an active dialogue to establish co-owned objectives, shared meanings, and a joint, self-determined plan of action to make changes they themselves consider desirable and of which the government hopes will, ultimately, contribute to a more sustainable society as a whole (Wals and Jickling 2002).

NEW FORMS OF LEARNING

We need alternative forms of education and learning that can develop the capacities and qualities individuals, groups and communities need to meet the challenge of sustainability. A whole range of forms of learning is emerging: transdisciplinary learning, transformative learning, anticipatory learning, collaborative learning and, indeed, social learning are just a few of those. These forms of learning show a high family resemblance in that they:

- Consider learning as more than merely knowledge-based.
- Maintain that the quality of interaction with others and of the environment in which learning takes place as crucial.
- Focus on existentially relevant or 'real' issues essential for engaging learners.
- View learning as inevitably transdisciplinary and even 'transperspectival' in that it cannot be captured by a single discipline or by any single perspective.
- Regard indeterminacy a central feature of the learning process in that it is not and cannot be known exactly what will be learnt ahead of time and that learning goals are likely to shift as learning progresses.
- Consider such learning as cross-boundary in nature in that it cannot be confined to the dominant structures and spaces that have shaped education for centuries.

These characteristics make clear that the search for sustainability cannot be limited to classrooms, the corporate boardroom, a local environmental education centre, or a regional government authority. Instead, learning in the context of sustainability requires 'hybridity' and synergy between multiple actors in society and the blurring of formal, nonformal and informal education. Opportunities for this type of learning expand with an increased permeability among units, disciplines, generations, cultures, institutions and sectors.

Social Learning

A special form of transformative learning that is (re)emerging in governance, natural resource management and indeed environmental education (Krasny et al. 2010) and education for sustainability (Wals 2007) is social learning. Two things need to be stated about social learning: it is not a new concept and it has many interpretations. The way I have come to understand social learning and the reason I find it so appealing in the context of sustainability can be captured by four key features: (*a*) the value of difference and diversity in energising people, introducing dissonance and unleashing creativity; (*b*) the importance of both reflection and reflexivity; (*c*) the power of social cohesion and social capital in creating change in complex situations loaded with uncertainty; and (*d*) the power of collaborative action that strengthens the (unique) qualities of each individual. As sustainability and sustainable development are increasingly seen as emerging from collaborative learning, the creation of a more sustainable world requires *learning*; not just any learning, but learning that leads to a new kind of thinking, alternative values and co-created, creative solutions, co-owned by more reflexive citizens, living in a more reflexive and resilient society.

Social learning in the context of sustainable development builds on several of its predecessors—some of which are ongoing—like action research and community problem-solving (Wals et al. 1990; Wals 1994), grassroots learning, collaborative learning and experiential learning, but it emphasises the cultivation and utilisation of pluralism. Pluralism is needed to allow for transformative disruptions to emerge. 'Transformative' refers to a shift or a switch to a new way of being and seeing (see also: O' Sullivan 2001).

'Social learning' is learning by mirroring one's own ideas, views, values and perspectives with those of others. A key assumption is that pluralism and heterogeneity offer more promise in finding creative solutions to stubborn issues, than 'singularism' and homogeneity (see O'Sullivan 1999). Put simply: people learn more from each other when they are different from one another than when they are like-minded, but only when there is 'chemistry' or social cohesion in the group; otherwise the differences between them may become barriers for mutual learning. Although the evidence is still sketchy, it appears that the development of social cohesion among a diverse group of students is conducive to better listening and empathy and for 'Gestaltswitching' (Wals and Blewitt 2010; Wals 2010b).

Gestalswitching is derived from the German concept of *Gestalt* or 'mind-set' and the related *Gestaltungskompetenz,* which some German sustainability educators and researchers use to articulate the kinds of qualities, competencies and attributes learners need when engaging in sustainability issues (Barth et al. 2007). Gestaltswitching, then, refers to the switching back and forth between different mindsets.

In the context of sustainability, many 'Gestalts' are in play. Figure 1 identifies four of them: the temporal Gestalt (past, present, future and intergenerational), the disciplinary Gestalt (a range of social science and natural science), the spatial gestalt (local, regional, global and beyond global) and the cultural Gestalt (multiple cultural mindsets whereby culture is broadly understood). Sustainability competence then refers to one's ability to respond to a sustainability challenge with all these Gestalts

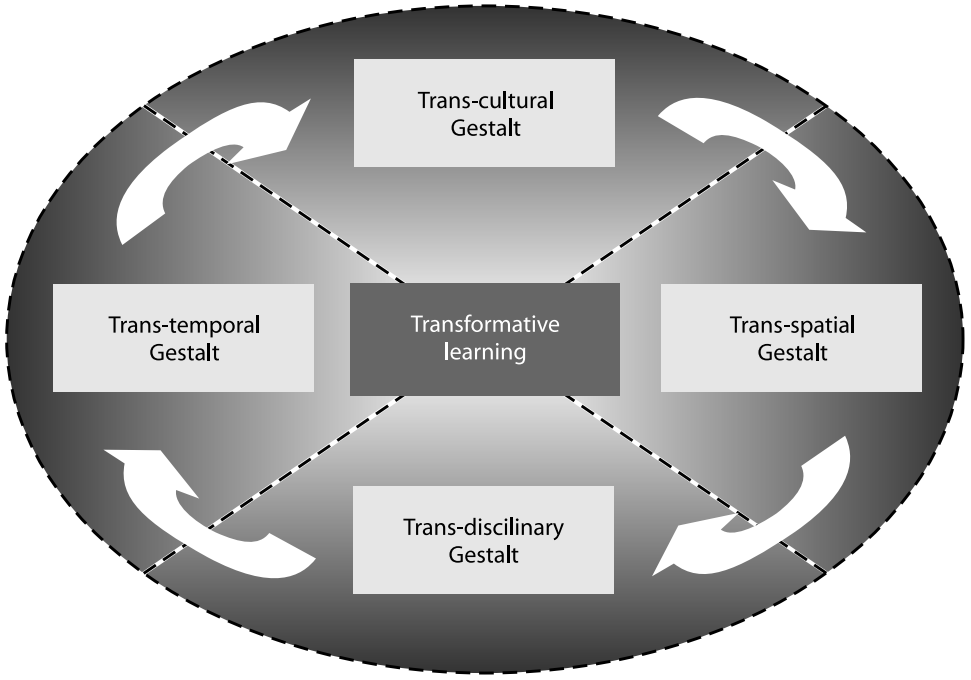

Figure 1 Four key Gestalts in play in transformative learning towards a more sustainable world

Source: Wals 2010a: 25.

in mind and to consider the challenge from a range of vantage points. The switching back and forth between different positions requires an awareness of one's own predominant Gestalts and willingness to, at least temporarily, put oneself into another Gestalt on all four dimensions represented in Figure 1. (It can be argued that another Gestalt, called the 'transhuman' Gestalt, needs to be added so we are able to imagine the world from the perspective of the non- or more-than-human world, allowing more ecocentric and biocentric mindsets to enter our thinking and acting as well.) Transformative social learning towards sustainability requires the integrative switching back and forth among the various Gestalts, mindsets or lenses identified here.

An important task of education, then, is to help learners to appreciate and use different mindsets. The development of knowledge and understanding has both personal and shared elements. Social interaction allows one to relate or mirror his or her ideas, insights, experiences and feelings against those of others (see also the transcultural dimension in Figure 1. The ability to 'mirror' requires empathy or a willingness to open up to and sympathise with 'otherness' and/or the other. In an increasingly individualising world, people's innate ability for empathy tends to erode, undermining our potential to explore and use diversity (de Waal 2009). In this process of 'mirroring',

personal ideas, insights, experiences and feelings are likely to change. Mirroring may prompt the learner to rethink his or her ideas in light of alternative, possibly contesting, viewpoints or ways of thinking and feeling. At the same time (learning) experiences, which are shared with others, are likely to gain importance. This is not to say that personal experiences, which are kept to oneself, are insignificant. But shared viewpoints or ways of thinking and feeling give the learner a sense of competence and belonging to the community of learners.

Another component of sustainability competence is the ability to cope with uncertainty, a major challenge for higher education as traditionally many scientists seek to minimise uncertainty and maximise predictability. The emergent uncertainty paradigm holds that it is an illusion to think we will achieve zero uncertainty. Instead, more science, information and knowledge might actually lead to more uncertainty as new complexities and questions arise. Rather than setting our academic minds towards minimising uncertainty and maximising predictability, it might be more fruitful to put our energy towards *living with* uncertainty: seeing it as a given, something that cannot be conquered.

In light of sustainability, living with uncertainty implies that we need to develop a 'precautionary reflexivity' that can steer us clear of the inaction, paralysis and apathy that often result from the prevailing 'wait and see' attitude, which suggests that as long as there is disagreement among scientists and policy-makers about what is happening to the planet, we have no reason to break with our existing routines. In their edited volume on education and climate change, Kagawa and Selby write: 'As a fundamental contribution to climate change [prevention and adaptation], it seems that educational spaces should build a culture of learning awash with uncertainty and in which uncertainty provokes transformative yet precautionary commitment rather than paralysis' (Kagawa and Selby 2010: 243).

POTENTIAL RESEARCH AREAS

To explore and develop new areas of learning in light of sustainability, four research areas will be pursued at Wageningen University.

Initiate a Comprehensive, Systematic Review of Existing Applications and Case Studies of 'Social Learning'

This component has three main purposes: (*a*) to document the full range of interpretations of social learning across all disciplines; (*b*) to document the range of existing applications of social learning; and (*c*) to understand how researchers and practitioners from different disciplines have attempted to funnel uncoordinated and inharmonious individual actions into collective actions that support explicit goals. Anticipated partners include: The Environmental Learning Centre of Rhodes University (South Africa), Western Michigan University's Office of Sustainability (USA); the Department of Natural Resources of Cornell University (USA) and the National Museums of Kenya (Kenya).

Understand the Role of Conflict, Dissonance and Diversity (Pluralism) in the Social Learning Processes

Although it is generally recognised that the dissonance that results from the interplay between diverging perspectives, values and knowledge systems can be a key trigger for learning, we know little about the idea of situated and personal 'optimal dissonance'. Given the importance of conflict and dissonance in social learning, it is important to be mindful of people's comfort zones or dissonance thresholds. Some people are quite comfortable with dissonance and are challenged and energised by different views, while others have a much lower tolerance for ideas conflicting to their own. Learning can occur on the edge of peoples' comfort zones: if the process takes place too far outside the comfort zone, dissonance can block learning. If the process takes place well within the comfort zone—as when homogenous groups of like-minded people come together—learning is also likely to be blocked. Facilitators of social learning become skilled in reading peoples' comfort zones, and expanding them little by little. They create space for alternative views that lead to the various levels of dissonance needed to trigger learning both at the individual and at the collective level. A better understanding is required of how these processes work and how they can be facilitated.

Identify Key Characteristics and Indicators of Sustainability-oriented Social Learning Configurations

An important question is what conditions are conducive to social learning in the context of sustainability. George Siemens speaks of a 'learning ecology' to emphasise that connectivity between people is influenced and can be strengthened by a number of interrelated factors that form a learning configuration. He uses the concept of 'connectivism' to refer to the need for the integration of principles explored by chaos, network, and complexity and self-organisation theories (Siemens 2005).

Although Siemen's work is embedded in a context of web-based and ICT-supported learning without a normative focus on sustainability, his conceptualisation of learning and learning environments appears promising for ESD as well. During the coming years, we hope to build on these insights and unveil new ones.

Describe Social Learning Competencies in the Context of Sustainable Development

Both participants and facilitators of social learning need basic competencies to trigger and support a learning process powerful enough to realise transitions that require a change of values, corporate culture, lifestyle, and, ultimately, a whole system redesign. But what are these competencies and how can they be developed?

This research challenge can be taken up in a context of sustainability-focused social learning at the crossroads of informal, nonformal and formal education. Such a context also includes community-based social learning and lifelong learning but always in connection with educational institutions and organisations.

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