BtSM 2009

Group discussions of the Special Interest Group on Learning for Sustainable Futures

Summary report by Jan Visser

BtSM's concern with sustainability

The concern to create essential conditions for the emergence of sustainable futures has been part and parcel of the driving forces behind the organization of the BtSM colloquia ever since the first one was held in The Hague in 2005. The theme for 2007, *Learning in the Perspective of Complex and Long-Term Change*, as well as the prospective theme for 2011, *Learning for Sustainable Futures*, say it all. Running, as part of the BtSM2009 colloquium, of a SIG on the very theme defined for 2011, was clearly intended to help thinking about the next colloquium along. Indeed, it did.

SIG sessions, assumptions, and focus

Two specific sessions of the SIG were held on Monday and Wednesday afternoon, 11 and 13 May 2009. It is understood that the issue of learning for sustainable futures was also addressed during sessions with a different primary focus that took place in parallel.

The assumption underlying the SIG discussions was that the mindset we refer to, in these colloquia, as 'the scientific mind,' has something to do with the issue of building a sustainable world. However, it is not assumed that the practice of science as such, narrowly defined as what scientists working in laboratories do, will, by its very nature, lead to sustainable futures. For this to be the case we must take a careful look at the mind as a whole and determine what specific aspects are necessary or desired dimensions of the scientific mind for the spirit inherent in science to benefit the world not only in a short or medium term perspective, but particularly over very long periods of time, ensuring the harmonious evolution of our own species, the biosphere, our planetary environment in general, and even perhaps the tiny corner of the universe within our reach.

The discussion was furthermore prompted by the recognition that important changes in human behavior are required to meet the challenges posed by the current planetary polycrisis. It is well known from research in other areas of behavioral change—such as related to efforts to make people kick the habit of smoking, to adopt healthy eating

behaviors, or to practice safe sex—that mere knowledge of what is at stake is generally insufficient to ensure that the desired change will occur. It was therefore made clear from the outset of the discussions that *Learning for Sustainable Futures* is not in the first place about *what we learn*, i.e. what we add to our store of knowledge, but rather *how we learn*. The latter emphasis, in addition to having pedagogical and andragogical implications in terms of the methodology of student-student and student-teacher interaction in formal learning settings, has profound implications for who and what we will be, thanks to the learning experiences in which we participate.

The key question

Thus, the debate over the two afternoons focused on the question: What conditions must shape the learning landscape, as well as specific learning settings within it, such that values and attitudes emerge that favor sustainability? Engaging with the world in ways we call 'scientific' is embedded in the values and attitudes we share. Besides, the resulting practice, when reflected on, feeds and reinforces those values and attitudes. In other words, the development of attitudes and values is an integral part of the building of the scientific mind.

Conclusions reached

Participants in the dialogue agreed that in any learning environment that fosters learning for sustainability the following conditions must be satisfied:

1. All participants in it should have profound <u>mastery of the concept of sustainability</u>, being able to relate sustainability to kinds of human action that further or threaten it. If such profound understanding is not present initially, the learning environment should generate it. However, while such conceptual understanding is essential, it is also almost totally insufficient as a condition for behavioral change.

2. Participants in the learning environment should have a <u>high degree of social consciousness,</u> i.e. awareness of who and what they are within their given social contexts and cultures, being able to identify with those cultures, participating in them and contributing to further shaping them. This implies the possession of well developed relational skills, particularly regarding empathy and cooperation.
    (As this point was discussed, the group analyzed, by way of example, features of the learning setting created at the American University in Cairo for the teaching of their university-wide course in scientific thinking. It was found that practices such as the use of concept maps, collaborative authoring via wikis, and Web-based social networking are excellent tools, if properly employed, to further the development of relational skills.)

3. The learning environment should generate among its participants a <u>profound sense of respect</u>. Participants in the SIG sessions were themselves mostly educationally engaged with adults and late adolescents. They found that if among people in that age bracket the capability to respect is not yet present it is very difficult, though not

impossible, to still develop it. Thus, one must start extremely early. The family environment and the community environment in which children gradually mature play a crucial role in the development of this ability.

4. A <u>sense of community</u> should equally be present in the learning environment, if it is to contribute to the development of sustainability-oriented human behavior.

5. Similarly, a <u>deep understanding of who and what one is, and awareness of where one wants to go, individually and collaboratively</u>, i.e., awareness of one's place and role in the universe, however seemingly insignificant, was likewise seen as crucial to learning for sustainability. The ability to make sense of the world in scientific terms is seen as an important contributor, though not an exclusive one, to such understanding and awareness. In formal education systems this has profound implications for the conception of the 'curriculum', for instance in terms of the proposals made by David Christian (see http://www.learndev.org/dl/OriginsCurriculumIdeas.pdf).

6. <u>Agency</u>, as demonstrated by fluency and naturalness of interaction with one's environment, must be present as well. The term 'agency' was preferred to that of 'empowerment,' which was felt to be too closely related to the notion of 'power.' The conditions mentioned above all contribute to the development of agency.

7. As far as traditional learning goals are concerned, it was felt that working towards <u>perfection in some key areas(s) of the learner's choice</u> would equally be an essential contributor to learning for sustainability. This idea resonates well with some of the proposals made by Kieran Egan in his recent book *The future of education: Reimagining our schools from the ground up* (Yale University Press, New Haven, CT; 2008). The idea also resonates perfectly well with the spirit underlying Roy McWeeny's work documented on the http://www.learndev.org Web site under *For the Love of Science* and presented by him during the colloquium. It focuses on developing fluency in interpreting the world using the descriptive tools of mathematical language. Similarly, perfect mastery of a language—one's mother tongue or a foreign language—allowing one to interact delicately with evolving discourse, would have a similar meaning.

8. Finally, <u>love and passion</u>, were identified as overarching key ingredients of an environment that fosters learning for sustainability.

The BtSM2009 participants who took part in this dialogue are aware that they merely scratched the surface of what it means to learn for sustainability. Continuation of the dialogue, based on research, the analysis of existing practice, and the collection of evidence in general, will be required. It is hoped that BtSM2011 will serve as an important forum for furthering this dialogue.