Think Piece
Learning of Environment(s) and Environment(s) of Learning

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Introduction

As we reflect on the 30 years that have passed since the first intergovernmental conference on environmental education that was held in Tbilisi, Georgia, it might be useful to review how learning of environment(s) has changed over time and also how environment(s) of learning have changed. And also, what challenges these changes present for contemporary societies.

The Tbilisi conference took place at a crucial time in human history, following sharpened awareness in the 1960s of human activity impacting negatively on natural systems. But, also a time when humans were still optimistic that environmental destruction could be reversed and that education might play a role in achieving it. What transpired at the conference might therefore be understood as a meeting where representatives of governments proactively defined objectives, goals and principles for guiding environmental education activities, in view of an impending socio-ecological crisis (at the time) (UNESCO-UNEP, 1978).

The focus of this short essay is on learning, therefore we first draw attention to some of the Tbilisi Principles pertinent to learning of environments and environments of learning. The first Tbilisi Principle suggests that environmental education should consider the environment in its totality, implying that learning about/in/for environments should involve all dimensions of environments and how these dimensions interact with one another. This Principle is linked to Principle 4 which states that the approach to learning should be interdisciplinary. Furthermore, Principle 2 states that learning should be a continuous lifelong process and Principle 8 states that learners should be active participants in planning their own learning experiences, and that they should make their own decisions as well as take responsibility for their decisions.

The Learning of Environment(s)

The conception of the term 'environment' has always been central to debates on environmental education and associated learning. Over time, the conception of environment has developed and changed from a strongly nature-ecology perspective to a human-socially influenced perspective and, of late, has seemingly gone full circle to a return to strong concerns about natural systems, the apparent loss of biodiversity, and threatened life-supporting ecosystems.

In the first published definition of environmental education, the focus was on learning about the biophysical environment and its associated problems (see Stapp *et al.*, 1969). In line with this definition, in the 1970s and 1980s we witnessed the inclusion of topics such as pollution and

nature conservation in the ecology section of school subjects such as biology and geography. Learning about the biophysical environment and its associated problems is of course important. However, there is a downside to only learning about the environment, that is, that in doing so we learn the lesson of hypocrisy. As Orr (1992) argues, when students learn about environmental problems, they learn that it is sufficient to know about them without having to do much about them. The Tbilisi conference was significant because it put forward a much broader conception of environment than the Stapp definition, opening up new ways of learning in relation to environment(s). As a consequence, we learned that environmental problems are complex and the products of interacting biophysical, economical, political and social dimensions. Furthermore, we learned that our knowledge of environment does not simply mirror what is out there, but that our conceptions of environment are culturally produced and mediated through language. As Di Chiro (1987:24–25) so cogently put it, 'We define [environment] by use of our own individual and culturally imposed interpretive categories, and it exists as the environment at the moment we name it and imbue it with meaning'. Moreover, Sauvé (2002:2–3) has helped us to identify several different conceptions of environment: environment as *nature*, environment as *a resource*, environment as *a problem*, environment as *a system*, environment as *a place to live*, environment as *the biosphere* and environment as *a community project*. Changing conceptions of environment were also associated with changing approaches to environmental education, enabling us to realise that we should not only learn *about* environment, but also *in/through* and *for* environment (Fien, 1993:15). Alternative approaches to learning about environments based on school textbooks have created expanded learning encounters whereby learners are able to spend time in environments and also, through active participation, engage in social action so as to help in solving local environmental problems.

We have learned the importance of place in environmental awareness and how, literally, places have changed over time. Orr (1992:126–127) writes that we are a displaced people for whom our immediate places are no longer sources of water, livelihood, friends, recreation, and so on. Rather, he argues we live 'amidst architectural expressions of displacement: the shopping mall, apartment, neon strip, freeway, glass office tower, and homogenized development'. As a consequence our intelligence of the Earth is waning and intelligence itself is becoming more abstract – our ecological literacy is on the decline. Guattari (2001) argues that through its technological arm, the media, Integrated World Capitalism (IWC) is producing human subjectivities that are domesticated, that is, passive, dull and uninspiring. The symptoms of the homogenising and normalising effects of IWC are evident in suffering occurring in the *three ecologies*: *environment*, *social* and *mental* (Le Grange, 2005). He writes:

> The earth is undergoing a period of intense techno-scientific transformations. If no remedy is found, the ecological disequilibrium this has generated will ultimately threaten the continuation of life on the planet's surface. Alongside these upheavals, human modes of life, both individual and collective, are progressively deteriorating. Kinship networks tend to be reduced to the bear minimum; domestic life is being poisoned by gangrene of mass-media consumption…. (Guattari, 2001:27)

And so, the world has changed since the Tbilisi conference, and suffering in the three ecologies has worsened. The pervasiveness of contemporary environmental problems has put a new face on the challenges confronting us in the 21st century. Some argue that ecological deterioration will soon eclipse ideological conflict as the national security concern in many parts of the world (Clover, 2000:213). Wars and civil struggle over diminishing resources such as water and fuel are already on the rise. In addition, within the next few years half the world's population will live in cities where existing scientific data already link air pollution and the destruction of green space to illnesses such as bronchitis, asthma, cancer, and other problems such as depression and escalating violence. In many ways this is a time of planetary crisis: a time when fundamental change is necessary for the global life-support system to remain healthy and operational.

We know that our knowledge of environment is socially constructed – that much we have learned – but the real effects of climate change, for example, are already felt and threaten to destroy much of the planet in the near future, including loss of food production, increased flooding, melting ice, the spread of diseases like malaria in Africa, and loss of land species. Perhaps a shift in the angle of vision is required as to how we view our relations with environments. It may be time for us to learn that although our knowledge of environments is and will always be socially constructed, it is the effects of problems such as global warming that will judge the adequacy of our accounts of it – not the reverse. As Matthews (1994:182) so neatly captures in a different context:

> The core ... idea is that the material world ultimately judges the adequacy of our accounts of it. Scientists propose, but ultimately, after debate, negotiation and all the rest, it is the world that disposes ... Ultimately, the concept is judged by the object, not the other way around. Just as volcanic eruptions are indifferent to race of those in the vicinity, ... so also the science of lava flows will be the same for all. For ... our science of volcanoes is assuredly a human construction with negotiated rules of evidence and justification, but it is the behaviour of volcanoes that finally judges the adequacy of our vulcanology, not the reverse.

We can substitute Matthews's reference to volcanoes with some of the most pressing environmental problems and the same argument will hold. But, what about the environments of learning?

Environment(s) of Learning

Guiding Principle 2 of the Tbilisi conference states that environmental education should be interdisciplinary, beginning at pre-school and continuing through all formal and non-formal stages. This Principle opens up the possibility of learning in different environments: in formal school settings, in places of work, local communities and in more or less natural settings. But it further suggests a movement away from textbook-based and transmission modes of learning. Much has been written over the past 20 years about the limitations of behaviourist learning theory and environments of learning which reinforce behaviourist learning. Constructivist

learning theory has discredited the idea that passive learning about environments can lead to behaviour modification. Constructivism has helped us to understand that learning is a complex process in which learners integrate their prior knowledge of environments with new knowledge introduced to them. Learners also learn in a social context and benefit from interactions with more capable peers or adults. The rise of constructivist learning theory has led to changed environments of learning, that is, environments that encourage active and cooperative learning and where learners draw on a variety of material resources from which to learn, including the local environment. Integrating personal knowledge with existing knowledge in the field is crucial to learning. If constructivist learning simply means that learners construct their own personal knowledge then such an approach would both trivialise and relativise environmental knowledge and thwart efforts at dealing with pressing environmental concerns such as climate change.

But outside of organised settings, learners are exposed to environments that are radically different to the way they were 30 years ago. As mentioned, urbanisation is occurring at a rapid rate across the globe, displacing people from their sources of food, water and livelihood. Contemporary learners are living at a time when the Earth is undergoing large-scale techno-scientific transformations. Learners are exposed to the Internet, cell phones, wireless laptops, Ipods, mass media, and so on. Through satellite transmission, events that occur in remote regions of the globe enter homes and penetrate the consciousnesses of those living thousands of kilometres away from the events. We noted earlier Guattari's point that the media is the technological arm of Integrated World Capitalism and is largely responsible for the erosion of the three interlocking dimensions of environment: nature, self and society.

Our argument, however, is that we cannot turn back the clock and long for the world to be what it was decades or centuries ago. Importantly, the new technologies that learners encounter and live with need to be viewed as potential holding places for alternative ways of living – the technologies can provide the escape from their potential domesticating, normalising and homogenising effects. Guattari (2001) argues that we cannot create new ways of living by reversing technological advancement and go back to old formulas, which were pertinent when the planet was less densely populated and when social relations were much stronger than they are today. New ways of living are to be found in responding to events (associated with Integrated World Capitalism) as potential carriers of new possibilities. As Pindar and Sutton (2001:9) write:

> It isn't a question of exchanging one model or way of life for another, but of responding to the event as the potential bearer of new constellations of Universes of reference. The paradox is this: although these Universes are not pre-established reference points or models, with their discovery one realizes they were always already there, but only a singular event could activate them.

We argue that education can play a role in creating conditions for activating the events that could enable learners to view or imagine the role of technology differently, that technologies can be the carriers of alternative possibilities that might help in addressing pressing

environmental problems. We therefore go along with Clover (2000:218–219) who indicates that it would require that, 'environmental education reaches out beyond the classroom and spill into the world that reproduces environmental problems – the everyday world where decisions and actions take place. Unless environmental education is integrated with home, workplaces, the informal social world lived outside the classroom, and the political and economic spheres, change will remain fragmented and hierarchical.'

Concluding Reflections

Over the years, the pendulum has swung from positivism on the one hand to constructivism (as social theory) on the other and, in terms of learning theory, from behaviourism to social constructivism. Constructivism has helped us to escape from the strictures of positivism, opening up possibilities of viewing environment(s) in multiple ways – for example, through conventional scientific approaches and also through indigenous ways of knowing. The Tbilisi conference started to open up these new possibilities. However, 30 years later environmental problems such as climate change might require of us to develop a greater sense of realism (without returning to positivism). We might need to, for example, come to the realisation that coastal cities might be flooded in 50 or 60 years' time (with all the associated consequences), irrespective of our culturally mediated or socially constructed views of climate change.

Another matter worth mentioning is that a great deal of what we have learned with respect to environment(s) and environments of learning is firmly ensconced in the academe but very little may have filtered down to schools. For example, in South Africa much has been written about the Tbilisi Principles in academic theses and journals over the years. However, it took 12 years before Tbilisi was mentioned in an education policy document in South Africa – selected Tbilisi Principles were mentioned for the first time in the 1989 White Paper on Environmental Education. However, this process was thwarted because of political change in South Africa and due to criticism that the White Paper process was not broadly inclusive. Six years later (in 1995) an Education White Paper was produced by a democratic South African government in which environmental education featured as a key principle in this document. In 1997 (20 years after the Tbilisi conference), a new curriculum framework has been developed in South Africa in which environmental concerns feature strongly for the first time. A concluding point which we wish to make is that all opportunities for addressing environmental concerns need to be used – that we can't wait for a new policy or national curriculum framework to first be put in place before we act. We have to learn to work within the wide range of learning environment(s) where people can potentially learn, with their attendant structures and frameworks, and view them as the potential bearers of possibilities for addressing environmental concerns.

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