Lifelong Learning: Towards a Theory of Practice for Formal and Non-formal Environmental Education and Training

Stephen Gough, University of Bath, UK, Kim Walker, George Washington University, USA, & William Scott, University of Bath, UK

Abstract

The starting point of the paper is that practitioners of all kinds concerned with lifelong learning in environmental education have theories of teaching, learning, and action. These they employ under sets of constraints which are likely to be unique to their own individual contexts. An approach is proposed which recognises the significance of such theories and constraints, and uses them as a starting point for learning. Central to the argument is the proposition that environmental learning is possible only if all absolute criteria for judging educational or environmental worth are regarded as problematic.

Résumé

Le document part de la prémisse que les praticiens de tout genre préoccupés par l'apprentissage continu en éducation environnementale ont des théories sur l'enseignement, l'apprentissage et l'action et que ces théories sont assorties d'un ensemble de contraintes qui sont probablement propres à leurs contextes individuels. L'approche proposée reconnaît l'importance de semblables théories et contraintes et les utilise comme point de départ de l'apprentissage. Au centre de cet argument est la proposition que l'apprentissage environnemental est possible seulement si tous les critères absolus pour jauger la valeur pédagogique ou environnementale sont considérés comme problématiques.

This paper outlines a possible approach to theorising practice for lifelong learning in environmental and/or sustainability education. The approach focuses on both formal and non-formal education, and is based on understandings that:

- education, training, and other activities which promote learning are key strategies in bringing about environmental improvement, and
- strategies to date in both the formal and informal sectors have not been as successful as hoped, and have often proceeded in ignorance of each other.

This paper explores possible reasons for this lack of success and suggests a framework for alternative approaches.[1]

Exploring assumptions

A variety of claims, variously exhibiting certainty, optimism, or resignation, have been made for the possible role of education in bringing about environmental improvement (see, for example, Fien & Trainer, 1993a, 1993b; Huckle, 1993, 1999; Wals, 1999; Hopkins, Damlamian, & López Ospina, 1996). From alternative perspectives, however, the appropriateness of environmental improvement as a criterion for the evaluation of educational interventions has been questioned (Jensen & Schnack, 1997), as has the appropriateness using education as a tool to promote particular agendas for bringing about such improvements (Jickling, 1992; Jickling & Spork, 1998; Jickling, 2001). A potentially still more intractable problem has been identified by Bowers (1995), who, in presenting a case which in some respects echoes one made earlier by Robottom and Hart (1993), notes that as long as educational systems are rooted in the same metaphors as the economic, social, and cultural beliefs, processes, and practices which seem to cause large scale environmental degradation, they are unlikely to be an effective means of reversing that process of degradation. The view taken here is that:

- Education cannot be expected to "save the planet" through, or mostly through, its own direct or indirect effects. This is at odds with the claims of writers on environmental education from quite different perspectives (for example Fien & Trainer, 1993a, 1993b; Tanner, 1998), but in keeping with a more general view that:

  > There is a social and scientific zeal about the potential of education for addressing many of our most important social needs. What is lost in this zeal is a more careful analysis of the potential of education within the

> constellation of conditions and complementary inputs that are necessary for education to pay off. (Levin & Kelley, 1997, p. 249)

A further point here is that "saving the planet" is not the only, or even the principal "important social need" targeted within the literature of lifelong learning. As Field (2000) points out, important advocates of lifelong learning such as the Organisation for Economic Co-operation and Development and the European Commission (OECD) see it primarily as a route to enhanced competitive advantage.

- Education is likely to make its most effective contribution to environmental improvement (broadly and loosely defined) where it is conceived as a component of a strategy of social capacity building (WWF, 1999), rather than as a stand alone (and "stand or fall") strategy. Capacity building activities include not only education and training but also, for example, efforts towards policy development and institutional strengthening.

In spite of the emphasis placed on lifelong environmental learning and environmental learning in the workplace by foundational documents such as the Tbilisi Declaration (UNESCO-UNEP, 1977) and Chapter 36 of Agenda 21 (UNCED, 1992), and with notable and important exceptions (e.g., Martin, 1996), it seems fair to say that the primary focus for much educational work in the environmental field has been upon young people in the formal school setting as "citizens-in-the-making," rather than, say, "employees-in-the-making," "parents-in-the-making," or "managers-in-the-making." Such omissions might be thought strange, at least if there is any basis for the apparently reasonable speculation that environmentally-significant choices are as likely to be made by people acting in the role of, say, "employee" as by people acting in the role of "citizen." Certainly, this educational focus on learners as young citizens seems to have contributed, if by default, to what appears to be a fairly widespread assumption that "education" is something that happens to children while what "adults"[2] need is training. At least in liberal democracies, the perception seems to be that if education is about how to be a good citizen then it cannot be for adults who, by definition, are citizens and have the same rights and capabilities within the law as anyone else to say what is and is not "good." On the other hand, the idea of training[3] school age children to be "good" employees raises a whole range of issues about both the origins of our environmental problems (Huckle, 1993) and the proper purposes of learning by young people (Whitty, Power, & Halpin 1998).

This perceived (and arguably false) distinction between education and training has a bearing on how the success or failure of each is perceived. With some exceptions (e.g., Leal Filho, Murphy, & O'Loan, 1996), there would appear to be a consensus around the idea that the achievements of environmental education have been disappointing on the whole, though it can be argued that there have been individual instances of excellent work (Fien, 1993; Fien & Spork, 1993; Scott & Oulton, 1999). Such judgements, clearly, are often framed in terms of the impacts of environmental education at the level of society as a whole. However, as Walker (1995) points out, what we know about environmental education in classrooms is hardly more encouraging:

> The research story is consistent—over time and across the dimensions of school education—resources, curriculum and practice. There is strong evidence to suggest that the problem of incorporating environmental education in the school curriculum is not much closer to being solved in the 1990s than it was in the 1970s. (p. 19)

Arguably, environmental education is now being judged increasingly in terms of indicators across all sectors. Outcomes-based education, competencies, standards, and indicators all require an account of impact. Unfortunately little has been done in researching impact at either the school or societal levels.

Environmental training, on the other hand, is more usually evaluated instance by instance in terms of rather specific learning outcomes or environmental indicators, and so tends to adjudge its progress rather more positively (e.g., Wehrmeyer, 1996). However, this is not to say that when attention is focused at the larger, societal scale the "training" road necessarily looks any shorter or easier than the "education" one (Welford, 1996, 1997).

In the context of lifelong learning, a link is envisaged between schooling and adult learning by the OECD (1996), which asks:

> What are the new teaching and learning roles predicted by high-quality education systems that are well prepared to meet the challenges implied by a lifelong learning framework? How can teachers, trainers, administrators and all those concerned be helped to perform these roles effectively? (p. 205)

The OECD identifies a number of specific obstacles confronting this desired process, and recommend extensive staff development for the education sector coupled with policy measures to:

- enhance the social standing of schools and teachers and
- raise the expectations which society has of them.

Taken as a whole, the forgoing arguments might be seen as making a case for reducing expectations about the direct role of education in environmental conservation, while simultaneously increasing expectations of its contribution to lifelong learning (and thus, perhaps, indirectly to environmental conservation). However, if understandings of environmental education and environmental training are to be changed in a manner that will lead to improved strategies and enhanced outcomes it seems important to explore the theories held by practitioners in the field, including theories of practice.

The theories of practitioners

Practitioners in formal and non-formal settings, policy-makers, and researchers in the field all have beliefs about the nature of effective teaching and learning. These beliefs are about how students learn, how teachers learn, epistemology, pedagogy, the nature of society, the nature of the environment, and what it means to be human. These beliefs are not always consistent, and often there are differences between the beliefs of policy makers, researchers, and practitioners. Two important points, however, are that:

- Changes in the beliefs of one particular group of social actors may influence the beliefs of others. For example, recent work by school effectiveness and improvement researchers (see, for example, Gray, Hopkins, Reynolds, Wilcox, Farrell, & Jesson, 1999) is increasingly finding its way into the thinking of teachers through their involvement in research, professional development programmes, or other means.
- Theories cannot safely be assumed to be consistent across the full range of educational scales.[4] This is to acknowledge the possibility that, for example, a particular teacher could "espouse" (Argyris & Schön, 1978) a particular view of effective practice based on recent research findings in relation to schools or education systems in general, but be guided, at the more restricted scale of her or his own classroom (with its particular constraints), by a quite different "theory in use." Hence, for example, they may say that the environment is important but show no evidence of this in their teaching.

In sum such complex sets of knowledge claims constitute the personal theories of learning of educators, policy-makers, and researchers. These theories are multi-faceted and prone to change over time and from one context to another.

Work in the field of educational change offers one possible clue to the range of influences on the theories which practitioners hold at various times and in various contexts in what is defined here as lifelong learning. Blenkin, Edwards and Kelly (1997) note the following possible perspectives in education:

- *Technological*. Desired learning results can be achieved through efficient and effective instrumental action.
- *Cultural*. Learning can best be achieved where practitioners and others defer to cultural norms which are deep-rooted and, for the most part, intuitive and implicit.
- *Micropolitical*. Learning is contingent on micropolitical power struggles within educational institutions.
- *Biographical*. Practitioners' views of learning depend on where they are in their careers, and what is happening in the rest of their lives.
- *Structural*. Practitioners' views of learning are influenced significantly by broad social trends.

All these perspectives may combine to influence personal theory-formation. For instance, an individual teacher might:

- wish to demonstrate means-to-ends rational instrumentality for the benefit of external inspectors,
- participate in staff room conversations with colleagues in which shared cultural understandings of what is and is not acceptable professional behaviour are propagated,
- compete with colleagues for promotion, praise, or resources,
- reject a given innovation on the grounds that she or he has "seen it all before," and
- hold views on a range of educational issues which are broadly typical of individuals of the same socio-economic background and age.

A further, and still less well understood influence on the theories of practitioners is what Payne (1997) calls "the emergence of education as a virtual social form of technologically mediated and abstracted information exchange," which "is already a globalising consequence of expert academic engagement with information superhighways" (p. 136). The work of Townsend, Clarke and Ainscow (1999) and Townsend (1999) seems to provide evidence of this emergence, with its claims about "3rd Millennium Schools" and "the Global Classroom." Whether discourses of this kind really have discovered the global educational lowest-common-denominator, or

are just further manifestations of a Western culture of sound-bites and slick presentation only time will tell. The relevant point here, however, is that they seem likely to have a significant, and as yet uncertain influence on the way practitioners engaged in lifelong learning think about what they do.

Theories of practice

Robinson (1993) has further developed the work of Argyris and Schön (1978), arguing that practitioners have personal "theories of action" which express the meanings, values and purposes behind people's actions. These theories are used by practitioners to make sense of, and attempt to solve, practical problems. Theories of action co-evolve with, and typically exhibit the same complexity and context-specificity as, the personal practitioner theories of teaching and learning discussed above. Problems confronting practitioners, such as the implementation of environmental education in a particular context, are tackled through strategies prescribed by theories of action.

It should not be controversial to say that implementing environmental education is an extremely complex matter. Reasons for this high degree of complexity include:

- the contested nature of the field of environmental education itself,
- lack of clarity about the relationships between environmental education, education for sustainable development, development education, peace education, futures education, and between all of these and "education" without qualifying adjectives,
- the need for environmental educators to take a view on a wide range of educational issues which remain, and are likely to continue to remain, contentious, and
- the need for environmental educators to take a view on a wide range of environmental issues, and issues relating to the interaction of socio-economic and natural systems, which are invariably characterised by uncertainty, competing credible claims, and an observable tendency for apparently incredible claims to turn out to be true. In short, these issues are characterised by "irreducible ignorance and the related concepts of surprise and novelty" (Kerry Turner, Lorenzoni, Beaumont, Bateman, Langford, & McDonald, 1998, p. 269)

A person's theory of action, therefore, is an attempt to resolve competing claims and uncertainties as these are experienced by that person, within the constraints (and opportunities) of their particular context. It might be seen

as an attempt to establish local certainty where, globally, none exists: an attempt which is necessary because action is clearly necessary and "irreducible ignorance" offers such a poor basis for it. Theories of action have their origins in the need to solve real problems, whether personal or professional, within a given set of constraints. These theories of action define what makes sense. For example, an action may be judged to make sense because it solves a problem by:

- conforming to a particular code of rules or conventions,
- being fair and just, or
- producing substantive gains of some kind (e.g., profits, promotion, or increases in populations of an endangered species), or minimising losses.

While it is clearly not impossible for a single action to bring gains against all three of these criteria (and/or others), it is not particularly likely either. This may result in an individual facing contradictory constraints and being forced to make choices which privilege one over another.[5]

The opportunity for lifelong learning through environmental education in this context is to take as its starting point the practitioner's theory of action and to adapt continuously the focus of learning as (and if) that person's theory of action develops.

To illustrate it may be helpful to consider the example of an attempt to promote sustainability through contributions to lifelong learning in Borneo where, in 1995, one of the present authors was employed as an environmental education consultant to a private contractor working on a state-funded infrastructure project. The purpose of the educational project was to promote correct use of new solid waste disposal infrastructure in and around the estuary of the Brunei River, a setting of great commercial, cultural, and environmental significance. As is usual with environmental education interventions, there were many stakeholder groups with an interest in the project. These included local teachers, expatriate teachers, government ministries, the contractor (an engineering firm represented by an Australian Chief Executive), the Chinese public, the Malay public, and local small businesses (largely Chinese run). The design of the educational intervention was found to be challenging because different stakeholder groups wanted it to make sense in terms of their own particular theories and the criteria for good practice associated with them, an issue subsequently explored through research (Gough, 1995; Gough, Oulton, & Scott, 1998; Gough & Scott, 1999). To illustrate:

- government ministers and their staffs were primarily concerned that the terms of the contract, and of the national development plan of which it formed a part, were being met. They tended to expect environmental education to have a set procedure to be followed as well, and were very receptive of checklists. An edited version of one produced by Roth (1970) went down particularly well with this group,
- local Chinese business people (and, by and large, their children in school) wanted to be shown, in concrete terms, that the benefits to themselves of using the infrastructure exceeded the costs. This suggested a role for taxes, subsidies or charges, supported by longer term educational efforts to change the prevailing definition of "benefit" while being sensitive to the need to avoid charges of cultural neo-colonialism, and
- expatriate teachers (from English-speaking countries in the main) overwhelmingly saw the project in terms of social justice (i.e., maintaining traditional culture and lifestyles) and ecological justice (i.e., maintaining biological diversity). They responded particularly positively (and not at all critically) to the notion that environmental sustainability and egalitarian conceptions of social justice and citizenship are inseparable from each other.

Clearly this situation presented an opportunity for learning by all those involved (including the consultant/researcher). Such learning we argue would not, and could not, be promoted through choosing between these perspectives. Rather, the challenge was to cause them all to become engaged with each other in such a way as to provide them with "the opportunity to reflect on their own practice and through critical dialogue develop a more adequate theory" (Walker, 1997, p. 159). In this way, we argue, a theory of practice which iteratively takes account of the varied theories and constraint sets of the players is possible.

Towards a theory of lifelong learning

Theories of action for lifelong learning through environmental education depend upon the organisational focus by which a person seeks to make sense of an uncertain, surprise-prone world.

It is suggested now that they further depend upon the view which is taken of the purposes of environmental education. It follows from this general proposition that whether a particular piece of environmental education is good or not depends as much on the perspective of the person asking the question as on the properties of that education. To say this is not to argue

a relativist case that all views are of necessarily equal merit, but rather that any one view is highly unlikely to be perfect, or to have nothing to learn from the others. Exploring these views (along with constraint sets and theories of action), and encouraging others to explore them, is therefore likely to be educational. Views of the purposes of environmental education, we argue, may be to a greater or lesser extent:

- broad or narrow,
- global or local,
- on how things were, or on how they might or should be, and/or
- empirical or moral.

A narrow focus for learning through environmental education would concentrate on species of living things. An example would be narrowly conceived interpretation activities within a national park or game reserve. A slightly wider focus would include consideration of species habitats and how these impacted upon species survival. Wider still would be a concern with human behaviour and natural systems which recognised that the problems of species and their habitats are rarely, if ever, separable from human economic and social activity. Examples of influential work which would seem to take this kind of focus would be that of Hungerford and Volk (1990) and Roth (1970). Finally, recognition that human economic and social activity cannot be understood without reference to issues of politics, ideology, and power might lead one to a broad focus on the social context of environmental issues. The no less seminal work of, for example, Fien (1993), Robottom and Hart (1993), and Huckle (1993) clearly belongs in this category. This proposed continuum is illustrated in Figure 1.

There are two important points to note. First, any particular individual or stakeholder group may be disposed to a particular focus, and may be unwilling to engage with educational efforts which non-negotiably begin from some other focus. To illustrate this with reference to the example given above, government ministers responsible for infrastructural development, and the contractor, were happy to work from a "human behaviour and natural systems" focus, and to explore implications for habitats and species maintenance. However, the very broad questioning of the social context of environmental action and change advocated by some writers in the field would have been likely to be seen by them as a clear challenge to their own positions. As such, the whole project would have been highly unlikely to be entertained at all. The issue of social context was, however, often cited as important by expatriate teachers.

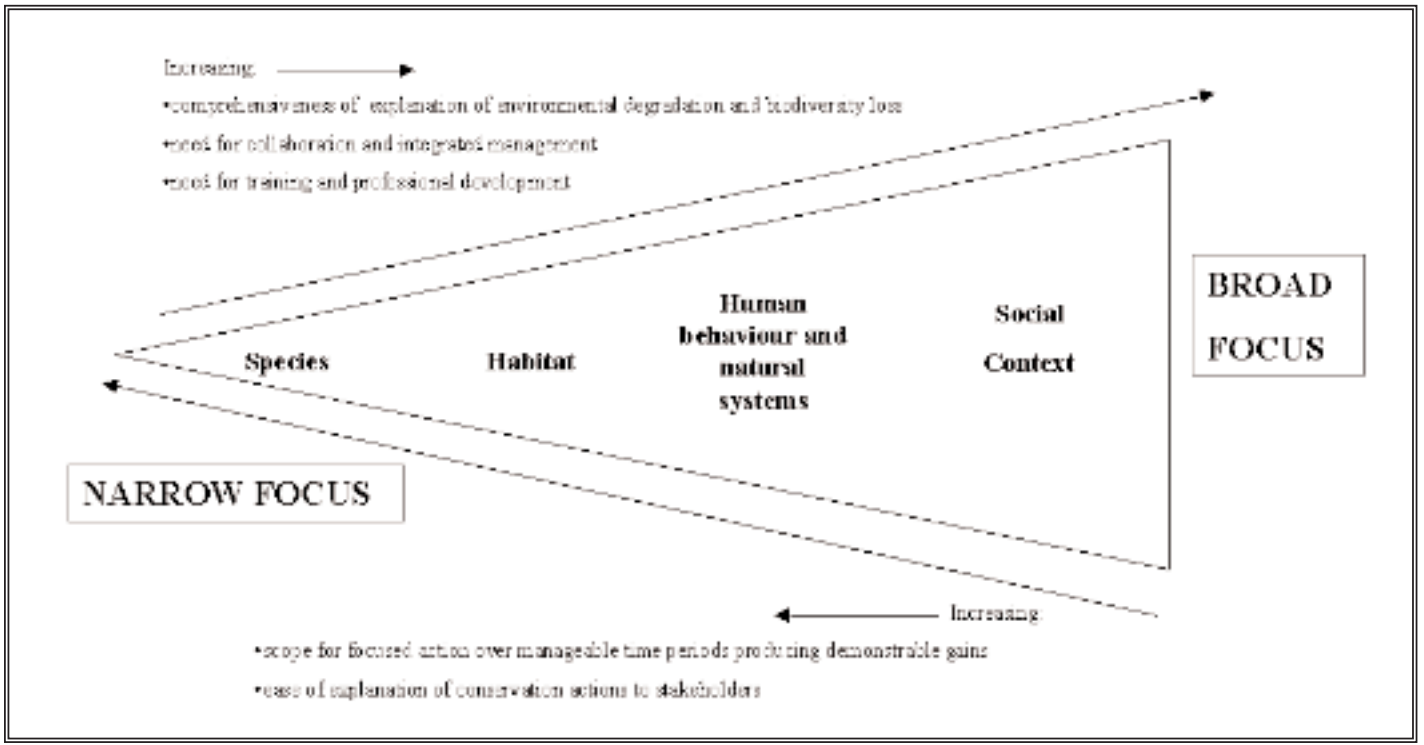

Figure 1. Trade-offs through changes in the focus of lifelong learning through environmental education

Secondly, it is not in any case clear that the project of environmental education is necessarily better served the broader its focus. While studying animal behaviour and counting species numbers is clearly hopelessly narrow as a basis for learning, the fact remains that the narrower the focus taken the easier it is to plan targeted interventions, evaluate results, and explain to interested parties what is being done. On the other hand, a very broad focus can result in lifelong learning being charged with responsibilities which are difficult to define, harder to explain to stakeholders, and harder still to achieve. To be blunt about this, if saving the planet depends on the global success of an egalitarian political project, and if that success can only be achieved through lifelong learning activities, then the planet is certainly deeply imperilled.

Once again, the challenge seems to be one of providing opportunities for those practitioners whose theory of action is based on any particular focus to engage with those whose focus is different and so build better theories of action. As suggested above, critical dialogue between practitioners is a mechanism by which improved theories of action may be achieved.

The remaining three dimensions across which it is proposed the foci of theories of action relating to lifelong learning and environmental education are likely to vary are illustrated in Figure 2. It is suggested that the greater the extent to which practitioners adopt a more global and futuristic focus then the more disposed they will be towards an emphasis on policy as a vehicle for change. Where the focus is on the future, but targeted locally, an emphasis on participatory action is more likely to result. In either of these cases the methods of action used within the theory are likely to depend on whether the issues are perceived predominantly in empirical and scientific, or in moral, terms.

A focus on how things were, on the other hand, points to a choice which might be characterised as "between myth or museums." In the case of both global and local foci an assumption by a given practitioner that the issues are centrally empirical in nature will point towards an effort of conservation. If the issues are seen as being moral in nature, however, one would expect to find a theory of action which valorised the celebration, even the mythologising, of things past.

Here too the challenge seems to be to promote engagement between holders of different theories of action, rather than to choose between them. One way in which this might begin to be attempted has been suggested by Walker (1997) and focuses on "shared understandings about environmental education" (p. 159-161). Some of these might be re-stated as follows:

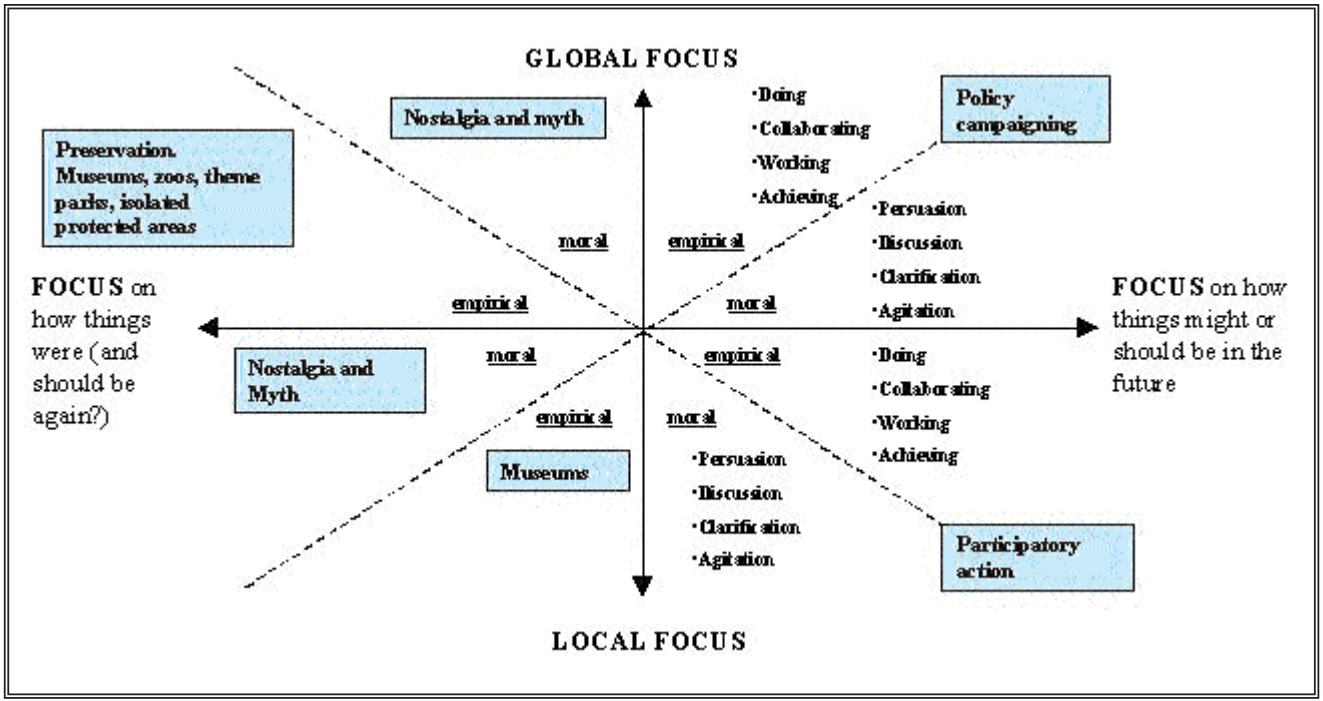

Figure 2. Three dimensions of the focus of theories of action in lifelong learning through environmental education.

- lifelong learning has a role in solving environmental problems,
- practitioners hold theories about their practice,
- theories held by policy makers, curriculum developers, educational researchers, teachers and trainers are likely to be different,
- the activities of all these groups are subject to constraints, and
- theories of practice and constraint structures are important in the implementation of environmental education through lifelong learning.

Once again, we would argue that this formulation of a theoretical underpinning for lifelong learning through environmental education is not relativistic. Rather, it is rigorous in insisting on a clear distinction between what we know and what we don't, and in offering a framework within which it is possible to think about both.

The promotion of lifelong learning in environmental education is itself likely to be as much about learning as about teaching, and should have as its core understandings by stakeholders of each others' theories of practice and action. We argue that the potential for the generation of synergies between different groups more than justifies any initial complexity, and that a complex solution is likely, in any case, to be required given the complexity of the problem.

Conclusion

We have argued that lifelong learning can both contribute to, and be brought about through, the solving of environmental problems. However, for these potential synergies to be realised it is necessary that the theories which educational practitioners and other stakeholders in educational and environmental processes have about their practice, and about the constraints under which they act, are considered. Environmental lifelong learning is possible, but insistence on absolute standards of judgement for either educational or environmental actions is likely to impede, rather than promote, such learning. This is because there exists no possible single human vantage point from which absolute judgements can be made.

It is, however, possible to make firm judgements of different types. A "type" of judgement is a consequence of a particular way of knowing. Broadly speaking, three such ways of knowing are of relevance to this discussion. Their products might be characterised as "fast-track," "middle-track," and "slow-track" knowledges.

- *Fast-track knowledge*. This is derived from practitioner experience solving particular, context-specific problems. It grows on-site, day-by-day,

moment-by-moment. Broadly speaking, it takes as given the characteristics of the setting in which knowledge unfolds.

- *Middle-track knowledge*. Is built up through the (possible) aggregation of practitioner experience with information derived from wider and more generalised assessments and studies *which nevertheless take the main cultural, social, environmental, and economic parameters of the overall situation as given*. This is the kind of knowledge used by technocrats to target specific desired outcomes within existing broad social frameworks. Its accumulation, validation, and dissemination takes time and involves the creation, operation, and maintenance of dedicated social institutions.
- *Slow-track knowledge*. This changes not when problems appear, are addressed, or are solved, but when new *problem definitions* are recognised in ways which cast previously accepted, broad-scale, cultural, social, environmental and/or economic assumptions into doubt. The emergence of such knowledge may *threaten* previously existing social institutions, and so may be resisted by them.

Each of these knowledges grows, in part and more-or-less quickly, through its dialectical inter-relationships with the other two. Hence, as Quicke (2000) writes of the development of what he terms a "new professionalism," learning will be enhanced where it is possible to:

> pull down the barriers which restrict imaginative engagement with the unique perspective of the other and hold back the development of genuine dialogue and mutual understanding. (p.313)

In the case of a particular practitioner, let us say for the sake of argument an English teacher in a secondary school, such barriers may consist of differences with colleagues, administrators, policy-makers, parents, and others which are founded in different understandings of:

- the key factors impacting on learning in this particular school (fast-track knowledge),
- the organisational characteristics of effective English teaching in secondary schools in general (middle-track knowledge), or
- the nature and goals of English teaching and of secondary schooling in general (slow-track knowledge).

To insist on a specific destination for lifelong learning in environmental education is self-defeating precisely because it closes a door on Quicke's (2000) "imaginative engagement" (p. 313). A better option is to

seek out better ways of travelling. One "way of travelling" will be to facilitate imaginative engagement by those individuals, groups, and institutions who, whatever their particular perspective, have a contribution to make.

Notes

[1] It is not being suggested here that terms such as environmental education, sustainability education, education for sustainable development and so on all mean the same thing, nor that debate about what they do mean is necessarily unimportant. Such debate is, however, not a central concern of this paper, which focuses upon practice for lifelong learning as it may occur within that broad range of educational activities linked by a degree of concern for stewardship of the biosphere.

[2] This is itself a potentially confusing term. For example, it is often used where "workers," "managers," or "stakeholders" would be more precise.

[3] This word can be softened to "teaching/preparing," for example. The underlying proposition remains controversial, however.

[4] The word "scale" is used here to indicate the various organisational levels at which it is possible to participate in, in this case, education: For example, the scale of the classroom, the scale of the department, the scale of the whole school, and so on.

[5] Individuals who are of a fatalist disposition may believe that no one action makes any more sense than any other because nothing they can do makes any difference (Schwarz & Thompson, 1990).

Notes on Contributors

Stephen Gough is Director of Studies for Advanced Courses in the Department of Education at the University of Bath, and is a member of the Centre for Research in Education and the Environment.

Kim Walker is a visiting scholar in the School of Business (Center for Environmental and Management Policy Studies) at George Washington University, Washington DC and formerly Academic Manager, Sustainability in Teaching and Learning, University of Technology, Sydney. She represents Australia on the OECD Environment and Schools Initiatives Committee.

William Scott is Professor of Education at the University of Bath where he directs the Centre for Research in Education and the Environment and edits the journal *Environmental Education Research*. His work focuses on interactions between sustainability and education and he is particularly interested in the roles and responsibilities that educators can and should have in respect of public policy towards sustainability.

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