

## ***Environmental Education Research: thirty years on from Tbilisi***

**Keynote Address to the 4<sup>th</sup> World Environmental Education Congress, Durban, July 2007**

I have been asked to speak about **Environmental Education Research since Tbilisi**, to explore what we might learn from this work, and look ahead to the challenges that now face us as a community engaged in doing, and using, research. I'm going to argue that we need greater openness to new approaches, and different ways of thinking and working, more understanding across cultures about who we are and what we know, and a stronger research focus on understanding the relationship between sustainability, society and learning. I'll conclude that, as an environmental education community, we need to reach out to other researchers and users of research, and especially to policy-makers. I'll argue that we need to do this for two reasons: firstly, because they need to know more about the significance of what environmental education researchers do – and, secondly, because we need to work with them if we're to make a significant contribution to resolving the issues the planet faces.

To prepare for this talk, I thought I'd better re-familiarise myself with the research literature from the past 30 years, and use that to examine the various shifts that have taken place since then: for example, shifts of emphasis, of engagement, and of approach. A number of things are apparent from doing this, and I'll say something about 4 of these today:

Conceptions of Research ...

Communicating our Research ...

Reporting Research ...

Future Research ...

I'll start by looking at the nature of research and how that has changed.

### **Conceptions of Research – gaining breadth and sophistication**

It's instructive to see how we think about research as a social process has changed over these past 30 years. Compare these two views. One is from the early 1980s. The other is a contemporary perspective from the OECD:

Research comprises:

... investigations employing systematic methods to study or interpret phenomena. It is data-based and employs valid observations with an intent to generalise results or build new models [ 1980s ]

... creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of humanity, culture and society, and the use of this stock of knowledge to devise new applications  
[ 2007 ]

Although obviously broadly similar, the modern view is much more open in terms of outcomes, with a change of emphasis from generalisation and modelling, to a focus on knowledge generation and its application. This reflects a shift in our understanding of what counts as knowledge, and hence its purposes. Or, more accurately, perhaps, a change in what's allowed to count as research. Well, that's about research in general – what about environmental education research in particular? This is the definition used in a review published in 1981:

Environmental education research concerns developing ...  
or analysing environmental awareness, valuing, or problem-solving behaviour.  
[ 1981 ]

And this is the definition from a review of the subsequent ten years of research, published in 1990.

Environmental education research concerns developing ...  
and / or measuring environmental awareness, ecological and issue-related scientific knowledge, issue investigation and decision-making skills, the empowerment of learners as environmental change agents, responsible environmental behavior ..."  
[ 1990 ]

This is more detailed as you see, but the definition's still focused on awareness-raising, and on what the individual can do, for example as a change agent and problem-solver, and on their moral responsibility. This definition also included a statement about the breadth of focus of environmental education research and its outputs:

Environmental education research

focuses on ... studies of programs, projects, personnel, facilities, curricular materials, and other resources involved in the delivery of environmental education ... including systematic reviews, critiques, summaries, and syntheses of research studies.  
[ 1990 ]

Here, you see an emphasis on formal educational provision, on its delivery and on the resources needed. Of course, all such definitions tend to reflect the interests of those doing the defining, but I think that any over-arching definition today would be considerably broader and more socially-aware than this, in order to reflect the considerable shifts in perspective that have taken place, for example, about what research is, what it might usefully focus on, and whose interests it needs to serve. Environmental education research now claims a broad social relevance, as the programme for this congress shows, and as any journal would illustrate. The Canadian journal's recent themed issue on religion is a good example of this. In order to investigate how emphasis and focus have changed, I looked back at environmental education research papers published 30 years ago, in 1977. This list of papers all appeared in that year:

- ✚ The effects of a water conservation instructional unit on the value held by 6<sup>th</sup> grade students.
- ✚ Gasoline conservation: a procedure for measuring and reducing the driving of college students.
- ✚ Attitudes and conditions for co-operation in a paper recycling program.
- ✚ An experimental analysis of electricity conservation procedures.

The focus here on water, fuel and electricity conservation, and on recycling, seems very topical, but anyone who lived through the 1970s will recall concerns then over resource use, and very real difficulties with energy supply and cost. There were other papers published, of course, and these are typical:

- ✚ The roles of attitudinal and personality variables in the prediction of environmental behaviour and knowledge.
- ✚ How young children view their world: the assessment and the implications for environmental education.
- ✚ An analysis of strategies for teaching environmental concepts and values classification in kindergartens.
- ✚ Conceptions of rural life and environmental concern.

Again, with a change of phrasing here and there, these papers could almost be published today. So has nothing really changed? Well, of course, it has. For example, the 1977 papers only reported research from North America, they were published by USA-based journals, and the research mostly involved experimental designs one way or another, demanding the statistical treatment of data – broadly in line with the narrow definition of research we saw from the early 1980s.

Looking around now, in 2007, all this has changed significantly: where research is carried out, where it's reported, as well as the underlying conception of research itself as a social process. All these have broadened out and become more inclusive, and what environmental education research is, and how it's done, is now representative of research conducted across the whole of the social sciences. As a consequence, in terms of how it's thought about and carried out, the field is now much richer than it's ever been. It is also less dependent on particular groups acting as gatekeepers, for example in universities, funding councils and journals, controlling what research gets funded and what gets reported.

And who is doing the research has changed as well. There is now a very healthy mix of graduate students, early and mid-career researchers and more senior colleagues involved, as well as teachers and other practitioners. All this is a symptom of the growth in the number of universities and institutes across the world contributing to the field.

It is, of course, impossible to show anything of this current diversity in one slide, but here's a flavour of the environmental education research being reported 30 years on from Tbilisi across some of the major journals in the field:

- ✚ Tertiary EE student projects: what the academics learned
- ✚ Children's perceptions and learning about tropical rainforests: an analysis of their drawings.
- ✚ Development of national assessment criteria for green schools in China
- ✚ Towards an interdisciplinary understanding of place: lessons for environmental education
- ✚ Using the urban environment to engage youths in urban ecology field studies
- ✚ Digital libraries creating environmental identity through solving geographical problems

Paul Hart and Kathy Nolan's 1999 review of research in environmental education argued that, since the 1970s, our research has moved on from a narrowly constructed research based in the scientific-realist paradigm to research that is enquiry-based on wider and more sophisticated ontological and epistemological grounds. I'd say that this trend has certainly continued over this past 8 years, and the research reported today draws from a broad spectrum of approaches and theoretical underpinnings. And as many have noted, it is this diversity which is so important. I made this comment in 2001:

I am arguing for a more inclusive and pragmatic approach to both environmental education and to environmental education research. It seems ... possible to use positivist, post-positivist, interpretivist, and critical paradigms, drawing on feminist, ethnic, cultural and other perspectives. This is consistent ... with a commitment to respect conflicting perspectives under conditions of uncertainty ... .

I remain convinced that although the field has expanded outwards from its narrow scientific-realist base, aspects of that long-established research tradition remain important and deserve respectful engagement.

So, 30 years on, and to borrow a couple of metaphors, we might conclude that our methodological portfolios are bulging, and our methods toolboxes overflowing. We've more choice than ever, and because of this, we're better placed than ever to be incisive about our research philosophy and approaches, and potentially, at least, able to combine these to good effect.

But how to do this? There is much talk these days of mixed methods, but maybe it's the combination of different ways of seeing and approaching the nature of the issues we're interested in that will be most helpful. Stephen Gough and I have likened this to using narrow beams of light to illuminate large dark objects; one of these from a particular methodological vantage point gives useful but limited information. In careful combination, however, much more can be understood. Because many of the research questions that face us are complex and multi-faceted, I think we owe it to ourselves and our funders to acknowledge the limitations of particular approaches.

I'd like to say something now about reporting the research we do.

### **Reporting Research – opportunities and choice**

The 30 years since Tbilisi have also seen a growth in outlets for research, particularly dedicated journals. Here are some of them; they'll be very familiar:

Applied Environmental Education and Communication  
Australian Journal of Environmental Education  
Canadian Journal of Environmental Education  
Environmental Education Research  
International Research in Geographical and Environmental Education  
Journal of Education for Sustainable Development  
Journal of Environmental Education  
Southern African Journal of Environmental Education Ethics and Action

Some are aimed at researchers, and some at practitioners, and the shift to an ESD discourse has resulted in even more outlets. There's also been a growth in sharing research electronically both in blogs and in on-line environments. I'd like to see much more of this, particularly bringing researchers together whilst research is being done, rather than just in terms of reporting results. The scope here seems immense for connecting researchers across contexts. In reporting research, however, inevitably there are choices to be made about an appropriate balance between openness and trust, as peer-review is still seen as a minimum guarantee of quality in many arenas, and publishing in journals remains important for an academic career.

Research journals, sometimes in partnership with research associations, have done much to improve mutual understanding of the strengths of different approaches and to encourage their use. But there's a paradox here. In their desire to keep papers short (often well under 5000 words) there has been a tendency for journals to squeeze the amount of space given up to a methodological justification of the research in favour of detail about methods and outcomes. An unintended consequence of this is that it's not always possible to get a purchase on the rigour with which the research has been conceptualised and carried out. This isn't just a problem in our field, of course, it's widespread, which is unhealthy. Editors may need to address the issue, even if it means allowing longer papers into their journals. The outcomes would surely be better for everyone; writers would need to spell out their assumptions and preferences, and readers would know where they stood. This is something that all editors could act on immediately.

I mentioned the Hart and Nolan review. There have been a number of such reviews over the years, most recently Mark Rickinson's, though such reviewing is getting more difficult to do because of the sheer volume of research to consider. This doesn't detract from the importance of such reviews, of course, and the need to ensure that they keep getting done. I hope someone, a journal editor maybe, will find a way of keeping these going. There's also been a growth in publishing in what I'm going to call more mainstream academic education outlets, with the following being examples of international journals that have carried environmental education research papers in the past 10 years or so:

Educational Review	International Journal of Science Education
Journal of Curriculum Studies	Journal of Moral Education
Journal of Philosophy of Education	Journal of Education for Teaching
Studies in Higher Education	

The list is actually much longer than this, and there are two main reasons why this is a growing phenomenon: First, some researchers are frustrated that environmental education and its research remains a niche activity, and feel the need to communicate with researchers in other fields. Secondly, researchers are under some pressure to publish in peer-esteemed journals, most usually those in international citation indices, and none of our journals is internationally recognised in this way. Helpfully, these trends reinforce each other, and the second will be a powerful driver for many of us. However, it's the first that ought to be more persuasive as there are compelling arguments for reaching out to others whom we might influence and work with. I hope and expect to see more of this, and would suggest to all researchers here that they ought to aim their next paper at the best education or social science journal they can, rather than at an environmental education one – even if this causes editors a few problems in the short-term. Inevitably, such cross-publication will help both the field and individuals. Reaching a wider audience with our work, and working with a wider range of stakeholders, would seem a key priority, and I shall turn to that now.

### **Communicating our Research – but is anyone else listening?**

It seems inescapable to me that the biggest problem with environmental education, and its research, is that it's still largely a minority activity conducted in isolation from the mainstream. But now that the world – or its senior policy-makers at least – seem to have turned to face the problems that we address, with their concerns about climate change and global inequalities, how will we respond? Will we, for example, work more closely with development education researchers, and those interested in global citizenship?

It surprised me recently, in a research proposal, to see environmental education characterised in this way:

Environmental education focuses on “transforming our relationship with the environment”

where, a focus on “society and development” seemed only an afterthought. And will we try to work more closely with those interested in learning more generically? It will be hard I think. As a field we're still too content with the security of our niche, and far too fond of talking to each other – just as we do in these congresses. We've got quite used to doing this over the years, and it's comforting, of course.

In a recent email exchange with me, Tom Marcinkowski wrote this:

“We in environmental education ... tend to talk among ourselves about education ... rather than reach out to explore ways in which we can work with, or otherwise complement, the efforts of colleagues in ... other sectors. ... . If humankind is to both address existing problems and shift toward more sustainable practices, ... we are going to have to find ways of breaking out of our moulds and work collaboratively.”

I'd say that sums up our position nicely. But we're not the only ones who work in boxes. At a recent seminar on ESD hosted by the German government, Mark Richmond, one of Unesco's senior Directors, spoke of the difficulty of getting those responsible for Education for All to take ESD seriously. This is an issue that colleagues of mine, working with educational researchers across Africa also face in their examination of how quality educational provision can contribute to economic development and poverty alleviation. Their attempts to argue that this question makes no sense outwith the framework of sustainable socio-economic development, and ESD, are not being successful.

Perhaps our next grant application as researchers needs to be with someone from outside our usual frame of reference, whether this is from another adjectival education, or someone from the educational mainstream, or from a different discipline altogether. At a time of greater recognition that inter-disciplinary research is needed, this would seem sound anyway, and this links with the point I made earlier about the

need for a combination of methodological approaches. This is surely time for something different, and for a bit of risk.

I said earlier that policy-makers across the globe have found themselves having to turn to face the problems that we have addressed for some time. This is good, of course – and about time too we might say. But, significantly, they don't seem to be turning to us – that is to environmental educators or researchers – or actually, to educators of any sort. In the UK, senior policy-makers have turned to psychologists because of the unfortunate focus on changing individual behaviours. They don't seem to be saying: Hey! You're an educator. You must know something about all this. What does your research say? How can you help?

This should be the beginnings of a golden age for environmental education and its research community – our time to be welcomed in from the cold. But is there any evidence that this is happening in any serious sense? Not from where I stand, certainly. But maybe no one else believes our persistent rhetoric that achieving global social justice whilst living within the Earth's carrying capacity is something that will be built through education in schools and universities. In a forthcoming paper for a special issue of *Critical Studies in Education*, Philip Payne comments on this isolation:

“... by and large, the mainstream discourses of education, educational research and teacher education remain immune to, resistant or disinterested in the enclave of thought, research and practice in environmental education research.”

All this seems disturbingly true, but we've no one else to blame but ourselves.

I'll come back to this point later. I want to turn first to the sort of research we might be doing.

### **Future Research – learning, being and becoming**

Annette Gough made a challenging point in the 2006 volume of the Southern African journal when she argued that the main difference between ESD and environmental education was that ESD is focused around capacity-building, and environmental education around problem-solving. Gough's capacity-building point is important. At one level, it's obvious in the sense that learning is about this – although building capacity for what, is at least a 2500 year-old argument. At another level, what we do only really makes sense in relation, not just to building our capacity to deal with problems that exist now, important though this is, but also in relation to situations that we cannot yet fully understand. To ignore this, and just to prepare people to deal with the problems of today is to miss the existential dilemma we face. Research effort to help people address this would seem crucial.

If sustainable development is only meaningful, in anything other than a limiting instrumental sense, if it's viewed as continuing adaptive social learning, which John Foster puts like this:

Sustainable development  
a process of making the emergent future ecologically sound and humanly habitable *as it emerges*,  
through continuous responsive learning – the human species' most characteristic endowment.

A social learning process of improving the human condition  
A process which can be continued indefinitely without undermining itself

... then research work needs to focus more on the process of learning, and how it occurs – across the lifespan. The sort of learning we're talking about here isn't just (or even mainly) about formal education and its outputs. It's about how we live (and will live) with each other and the planet.

We still know very little about the ways in which learning impacts on people's lives – or the ways in which people's living affects their learning. Foster's continuous adaptive social learning is complicit in our being – and becoming – who we are and who we shall be – and in our unbecoming who we once were. In this view, we become through learning – and learn through becoming – and unbecoming, and if sustainable development is about learning about how we live, and how that might change, research on this would seem crucial for us all. To do all this, we'll need to work with other researchers and agencies to recognize the existential realities of the problems we face which cannot be labeled 'environmental', 'developmental' 'social' or 'economic', but need to be seen as something much more subtle, and taken in the round.

In the review of its first 10 years of work, the journal EER, set out a number of recommendations for future research that came from those who contributed to the review. These recommendations were expressed under 3 headings:

1. Environmental education research as connected across interests, preferences, approaches, time, and distance
2. Environmental education research foci needing attention
3. Sustainable development as inherently a learning process that needs researching by / with those involved in the dynamics of such learning

Looking back at that review, in the context of this congress, and what I've been saying, amongst the most significant of the recommendations for future research would seem to be these:

- ✚ Be open to new or unfamiliar ways of doing ... research, whilst constructively engaging with work already archived.
- ✚ Employ and research multiple perspectives [so that] different communities of research practice can understand and engage with one another ...
- ✚ Research what we know and how we have come to know this, and how such knowing, whether linguistic or embodied, serves to contribute to who we are, and might yet become.
- ✚ [Inform] educational and research discourses ... by practitioners and practice in diverse cultural contexts, starting with real issues and experiences in local communities

The review also concluded that in order for our understanding of learning as process and outcome to develop and deepen, we need to become more ...

- ✚ reflexive about what we mean by learning, and wide-ranging in where, when and how we seek to research such learning;
- ✚ sophisticated in our use of theory (learning, social, cultural, environmental ...) and existing traditional and non-traditional forms of knowledge;
- ✚ creative in how we seek to integrate knowledge generation with knowledge transformation / utilisation.

These ideas about more openness to new approaches and different ways of thinking and working, about the need for greater understanding across cultures about who we are and what we know, about the need for greater understanding of the relationship between learning, society and sustainability, all chime with the points I have made about the need to reach out to other researchers and users of research who need to know more about what we do, and with whom we need to work if we're to make a real contribution to the future.

My final point is to stress again the need to escape from our isolation, to work and communicate with others, and persuade them that what we do is important. But what do we have to offer them? What can we say to policy-makers and practitioners – and the public – about what we've been doing these last 30 years and might now do that will help address our global needs? What aspects of our range of research would we point to?

Over the last few weeks I've been asking this question:

Given all the difficulties the world now faces in relation to development and the environment – and the importance of education in addressing such challenges – what insights does environmental education research provide that will help us?

And it's a question that's disturbingly difficult to respond to in a satisfactory fashion, which is why I'm presenting here, rather than answering it myself with any degree of confidence. I do wonder how you would respond. I'm also setting it out here because I think it's a question we might ask of ourselves.

Coincidentally, the 30<sup>th</sup> June edition of the UK Times Higher Education Supplement carried a related story by Richard Rose, an expert on conflict and divided societies. He, and a few others, were invited to talk with President Bush about this sort of question. The focus was Iraq, of course, and what might be done now. Rose had three minutes to make his points, choosing to do so in, as he put it: "hard-hitting one-liners, rather than in the indirect discourse of mandarin English".

What *would* we say if our President or Prime Minister gave us three minutes to address this question, and make our points? What would *you* say?

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