

# Critical Environmental Education Research: Re-Engaging the Debate

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## **Abstract**

*The field of research in environmental education has experienced several changes in orientation in its first 25 or so years. In the period of the 70s and 80s, the most visible approach to environmental education research was clearly applied science in nature. From the late 80s/early 90s there has been a period of intense debate about research in environmental education, in which the patterns of research established in the 70s and 80s came to be reflected upon in a more critical fashion, previously taken for granted assumptions questioned, and a range of new approaches to research identified and critically considered. Methodological debates were engaged, arguments for alternative approaches developed, and critiques presented. This article re-considers some of these arguments in light of recent critique and project research experience, and argues for a recognition of the practical exigencies in conducting project research in real contexts.*

## **Résumé**

*Le domaine de recherche en éducation environnementale a vécu plusieurs changements d'orientation pendant ses vingt-cinq premières années. Pendant la période des années 70 et 80, l'approche la plus visible en recherche sur l'éducation environnementale était clairement les sciences appliquées de la nature. Dès la fin des années 80 et au début des années 90, il y a eu une période d'un intense débat au sujet de la recherche en éducation environnementale, dans laquelle les modèles de recherche établis dans les années 70 et 80 sont apparus d'une manière plus critique, des suppositions considérées antérieurement comme acquises ont été remises en question et une variété de nouvelles approches à la recherche ont été identifiées et potentiellement critiquées. Des débats méthodologiques furent engagés, des arguments pour des approches alternatives furent développées et des critiques présentées. Cet article revoit quelque-uns des arguments à la lumière de critiques et d'expériences de recherche récentes pour une reconnaissance des exigences pratiques dans la conduite de projets de recherche dans des contextes réels.*

## “Norming,” “Storming,” and “Performing” Research in Environmental Education

We are at an interesting point in development of this field of research in environmental education. This field has experienced several changes in orientation in its first 25 or so years—changes that could be summarised as moments of “norming,” “storming,” and “performing” research in environmental education.<sup>1</sup> As a result we are at a point where careful practical deliberation about research approaches is feasible.

### *“Norming”: A Period of Unreflective Environmental Education Research*

In the period of the 70s and 80s, the most visible approach to environmental education research was clearly applied science in nature. This research was not publicly self-reflective: this was a period of uncritical environmental education research. The earliest international journal in the field, the *Journal of Environmental Education*, reported research largely of an empirical, quantitative, quasi-experimental nature, almost to the exclusion of other kinds of research. A result of this is that research in environmental education came to be defined in terms of the assumptions underpinning applied science research, and inquiry based on other methodological approaches tended to be deemed as “not real research.” Another outcome was that the extensive use of applied science approaches to research contributed to the adoption of a broader “instrumentalist” perspective in terms of which not just research problems in environmental education but also other registers of work such as curriculum development and professional development came to be constructed within and informed by applied science thinking (Robottom, 1993a; Robottom & Hart, 1993; Robottom & Hart, 1995). This was a period, by and large, of critically unreflective practice in research in environmental education, during which the field was marked by reproduction of patterns of established research practice (Robottom & Hart, 1993).

### *“Storming”: Challenging the Citadel of Established Research Practice*

During the late 80s/early 90s there was a period of intense debate about research in environmental education (Mrazek, 1993) in which the patterns of research established in the 70s and 80s came to be reflected upon in a critical fashion, previously taken-for-granted assumptions questioned, and a range of new approaches to research identified and critically considered. Methodological debates were engaged, arguments for alternative approaches developed, and critiques presented. In particular, the most visible approach to research in the “Norming” period came to be understood as:

- applied science in nature (it purports to be experimental like scientific research, invoking quantitative pre-test/post-test designs);

- objectivist (it treats teachers, children and educational settings as components of an objective reality, and has an overall interest in the generalizability of its “findings”);
- instrumentalist (it routinely assumed the sanctity of a particular set of very dated goals for curriculum development in environmental education, and sought almost without exception to measure the adherence of people and programs to these external and dated goals); and
- it routinely defined the purpose of education as the shaping of human behaviour and sought a state of prediction and control over human behaviour (Robottom & Hart 1993, 1995).

*“Performing”: Reflective Environmental Education Research*

Partially overlapping with but largely subsequent to this period of debate and metatheorizing about research began a period of substantial project research in which large-scale, externally funded international project research was undertaken, using methodologies informed by the period of methodological debate. The self-conscious informing of project research by this period of debate is clearly evident in the presence of “methodological justification” sections in research proposals, grant applications and higher degree project proposals, with attention being paid in such proposals to a self-conscious positioning of chosen methodology within the (newly recognised and acknowledged) range of alternative (or contesting) methodologies. Further, this project research provided opportunities that transcended their immediate substantive objectives for which they were funded in the first place—they also provided opportunities for working through in practice some of the methodological positions advanced in the period of methodological debate. Grounded as the practice of these projects was in the theorizing of the methodological debate, they provide valuable opportunity for practical reflection.

As a participant in both the period of debate (Robottom & Hart, 1993a; Robottom, 1989; Robottom & Hart, 1995) and the current period of project research (Robottom & Kyburz-Graber, 2000; Kyburz-Graber & Robottom, 1999; Lotz & Robottom, 1998; Robottom, 2003), I intend in this article to re-examine some of the methodological arguments in light of both my own recent project experience and some recent developments in the literature that have focused on my personal professional practice. This intention is consistent with the idea of a reflective (research) practitioner making on-going deliberative choices about methodology, or as stated back in 1989:

What seems to be required is a deliberative choice of methods—we need in particular to deliberate carefully upon the political theory embedded in alternative evaluation [research] approaches on the one hand, and the spirit of ... environmental education on the other. We do need to regard as problematic the merit of the paradigm of our research .... (Robottom, 1989, p. 442)

And again in 1993:

We need to adopt a broad-based view of research in this field ... to engage the debate about the relative adequacy of different (competing) approaches to research in environmental education, so that their respective epistemologies, political theories and assumptions about the role of research itself are made explicit and critically appraised .... (Robottom & Hart, 1993, p. 65)

The project research I will be drawing on, directly and indirectly, in this article includes the following:

*The Yukon Native Teacher Education Project*

This was a three year project funded by the Yukon Territorial Government and conducted with colleagues from the University of Regina, including Dr. Paul Hart. Essentially the project involved participatory approaches in exploring educational and social issues associated with the first three years of a teacher education program for Yukon First Nations people (Hart, Robottom, & Taylor, 1994; Taylor, Goulet, Hart, Robottom, & Sykes, 1993).

*Environment and School Initiatives Project (ENSI)*

I was involved for three years as the “Pedagogical Support Person” for this project involving twenty member countries of the Organisation for Economic Cooperation and Development (OECD). The ENSI project explored a form of environmental education premised upon active learning rather than upon the transmission of knowledge, supported by an approach to professional development similarly premised upon participatory action research rather than upon instrumentalist, centrally orchestrated teacher in-services (Robottom, 1993b; Robottom & Kyburz-Graber, 2000; Mayer, 1990; Posch, 1993; Elliott, 1991). In more recent times I have re-established my links with this project, which today is conducted as an independent international network with a secretariat hosted by one of the member countries working as clearing house. The project was historically designed as a *research-based innovation*. It is *research-based* in adopting professional development approaches that were informed by action research principles; it is *an innovation* to the extent that environmental education represents a challenge to established practice in schools and elsewhere.

*AusLinksProject*

I was the Australian Project Director for the AusAID project “Educating for Socio-Ecological Change: Capacity building in environmental education, focusing on South Africa’s tertiary educators” (known as the AusLinks project) . This was a two-year project managed by IDP Education Australia that involved collaboration among eight tertiary institutions in two countries (South Africa and Australia). The project focused on research-based approaches to curriculum development and professional development in a range of settings in immediately post-apartheid South Africa. In this project, the development of case studies of changing practice was conceptualised as central to professional development as participants reflect critically on the meaning and significance of their theories, policies, organizational arrangements and teaching practices within a context of

social reconstruction (Le Grange, Makou, Neluvhalani, Reddy, & Robottom, 1999; Le Grange, 2003; Lotz & Robottom, 1998; Robottom & Kyburz-Graber, 2000).

Each of these projects involved participatory approaches to research informed by action research principles. Toward a more critical reflection on this kind of research practice, I wish to engage two published critiques, both in their own terms and in relation to the practical project experience gained in the projects cited above. These articles (Walker, 1997; Oulton & Scott, 2000) raise some important issues in environmental education research; they also focus squarely and critically on my own work (conducted individually or in association with Dr. Paul Hart of the University of Regina, Canada).

### Critical Approaches to Environmental Education Research: Re-engaging the Debate

From the vantage point of recent project experience in the environmental education projects cited earlier, I wish to address two sets of issues emerging from Walker (1997) and Oulton and Scott (2000) which focus on environmental education research methodology in general, and on critical approaches to environmental education research in particular:

- the assertion that there is a systemic failure of research to improve environmental education in schools, and that this failure can be attributed to a particular set of researchers in environmental education; and
- given the importance of a capacity for deliberative methodological choices in research projects around the world, what methodological issues lie behind a tendency for these deliberative choices to be dismissed as “failures” and “leading into a cul-de-sac”—especially in relation to research that has been judged by the project researchers themselves to be successful in their own professional contexts?

In the abstract to her article titled “Challenging Critical Theory in Environmental Education,” Kim Walker (1997) asserts that educational researchers have failed to improve the teaching and learning of environmental education in schools, that much research has been grounded in socially critical theory and therefore a more adequate theory is required:

This paper asks why educational researchers have failed to improve the teaching and learning of environmental education in schools.

The key issue, then, is why has research in environmental education had so little influence on the learning and teaching of environmental education in schools? (p. 155)

*What is the basis for the claim that research is responsible for a “failure” to improve teaching and learning in environmental education?*

Walker asserts that research in environmental education is ineffective in improving learning and teaching in environmental education. This is itself such a global claim that it is difficult to respond on the same universal scale. One could make the equally global claim that research in environmental education is actually effective in improving learning and teaching in environmental education and this would be equally difficult to contest. There is a responsibility to attend such a global claim with supporting global evidence, and Walker fails in this responsibility. Upon what evidence is this based? What is the evidence that the incredibly rich and enduring environmental education research tradition of the University of Southern Illinois at Carbondale has been ineffective? Where is the evidence that the work of the ENSI project in western Europe involving some twenty schools over an eighteen year period has been ineffective? Of the more than twenty national evaluation reports associated with the ENSI project, Walker refers to only one. What of the AusAID-funded research and development project (AusLinks) in post-apartheid South Africa and the developments that have occurred since the completion of the project? What of the research work conducted by participants in the Masters programs at Deakin University and Griffith University in Australia (where their work is explicitly grounded in critical approaches) and several universities overseas that draw extensively on the Deakin/Griffith research perspectives—universities like the University of Regina and University of Quebec at Montreal? And what of the National Professional Development Program (NPDP) in Australia, within which several of the sub-programs of the NPDP are based on research conducted by their authors—what is the evidence that these were ineffective? In addition, major three year research projects (see for example Robottom, Malone, & Walker, 2000) funded by the Australian Research Council have been conducted by Griffith University and Deakin University—where is the evidence that these were also ineffective? Walker’s global claim about the ineffectiveness of research in environmental education may or not be accurate; the point is that it remains an unsupported assertion in her article.

Walker’s (1997) second assertion is that the reason that environmental education is ineffective is that “environmental education is largely influenced by socially critical theory.”

It is claimed in this paper the reason why the problems of implementing environmental education in schools have been identified but not solved is that environmental education is largely influenced by socially critical theory. (p. 157)

How can it be claimed that environmental education is largely influenced by socially critical theory? Out of the more than thirty years of research in environmental education internationally, socially critical forms have been

articulated only in relatively recent times (perhaps the last 10 years) and by relatively few research centres (environmental education research centres at Griffith and Deakin universities are probably the most visible among these). Any review of the literature of environmental education will reveal that the impact of these active but recent and restricted Australian centres on the work of the international field of environmental education over the period of 25 or so years to the date of Walker's assertion is relatively minor in the global scheme of things. There are other, far more active, longer established and more visible players in the field of environmental education research. Attempts to lay the cause of a perceived failure of environmental education in general over the past thirty years at the door of a relatively newly emerging (as it certainly was in 1997) intellectual perspective are difficult to understand.

Annette Gough has also recently queried Walker's linkage of an alleged failure of the field with the adoption of research approaches based on action research principles. Gough (2004) points out that the "main mode of inquiry for schools participating in the [large-scale Victorian] Science in Schools Research Project was action research" (p. 37) and asserts that the environmental science initiatives in the schools strongly engage the traditional objectives for environmental education, thus making a case for success (rather than failure) of action research in improving environmental education practice.

Gough's report on the successful Science in Schools Research Project throws some light on another of Walker's claims—that socially critical theory is not a practical theory and is unable to contribute to a practical solution of the problems. Walker is quite unequivocal on this issue:

... much of this research has been grounded in socially critical theory and, while the theory is an effective mechanism to critique practice, it does not provide the strategies to solve educational problems .... (p. 155)

This is not a practical theory and while it may be appropriate as a critique of the problems it is unable to contribute to a practical solution of the problems. (p. 157)

There is a problem in the implementation of environmental education that requires a research solution. Emancipatory action research is not providing that solution. The issue is that the research formulates problems in ways that have nothing to do with the theories of teaching and learning of the practitioners involved and, therefore, their problems as they experience them. (p. 158)

Gough's report on a major state-wide project appears to provide strong evidence to the contrary.

Walker implies that we need alternatives to critical approaches because such approaches ignore the theories of practice held by practitioners and impose their own theories on practitioners. Walker argues "the issue here is

that researchers must not ignore practitioners' theories of their practice" (p. 159) and "[t]he important point is that socially critical theorists prescribe the preferred theory" (p. 161). There are two methodological points here: whether critical approaches to research are practical, and whether critical researchers seek to replace practitioners' theories with their own.

Two main points remain unclear. First, whether Walker is referring to socially critical theory or to approaches to research that might be based upon such theory, and second, what problems she is referring to. Nevertheless, it should be said that critical theory, as espoused by those for whom it does inform their work, is necessarily practical. Approaches to research, curriculum development and professional development that are informed by critical theory are mediated by processes of "praxis," or critical reflection on practice. Such approaches can only proceed if there is a dialectical relationship between theory and practice, knowledge and action, in which the practitioner's or researcher's theorizing is at once the topic of, and informed by, his/her educational practices. Since action research is the form of research most frequently associated with critical theory in the field of environmental education, it is appropriate to point out that the starting point in action research inquiries is always those issues of interest and concern to practitioners themselves. The means of action research is thus contingent upon practice, as explained by Tesch (1990):

Action research is ... "a form of self-reflective inquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices and the situations in which the practices are carried out". (p. 49)

Walker (1997) herself admits that "Emancipatory action researchers claim that research projects are ideally owned by the practitioner rather than having shared ownership between researcher and practitioner" (p. 158); this is precisely because in such research, the preferred starting point is the practice and practical circumstances of the practitioner, not some a priori research agenda of the researcher. So it is no surprise that a common outcome of critical approaches to research in environmental education is in fact case studies of changed environmental education practice in particular contexts (as in the NPDP, ENSI and AusLinks projects referred to earlier)—case studies which show marked diversity. To regard a critical approach like action research as "not a practical theory" and as incapable of contributing to educational improvement on these grounds seems at odds with the (published) achievements of researcher participants in Australia, Europe, South Africa, and Scotland, at least. And it is precisely this focus on practice that is at the heart of ENSI's commitment to action research as the conceptual frame for supporting teachers in environmental education.



## *Pitfalls in Second-hand Research*

Walker's article actually has much in common with a later article by Chris Oulton and William Scott (2000). In fact the latter article largely reproduces the argument of the former. Both articles commence with an assertion that environmental education research is failing the field, and both suggest they know the reason for this:

*Walker:* There is research evidence that indicates that environmental education is not being implemented in many schools .... An analysis of the research conducted as part of Australia's contribution to the Environment and School Initiatives (ENSI) project (Robottom, 1993) provides a possible explanation .... (p. 155)

It is claimed in this paper [i.e in Walker's article] that the reason why the problems of implementing environmental education in schools have been identified but not solved is that environmental education is largely influenced by socially critical theory (Walker, 1997, p. 157).

*Oulton and Scott:* Walker (1997, p. 155) offers an alternative perspective in her analysis of the Australian experience of the ENSI programme. In her discussion of why research in environmental education seems to have had "so little influence on ... environmental education in schools", Walker examines Robottom's (1993) analysis of the Australian ENSI programme where the effectiveness of environmental education in the ENSI schools was to be determined on the basis of a set of criteria relating to environmental education of a "more socially critical kind" (Robottom, 1993, p. 64) drawn from socially critical theory ... Walker (1997, p. 157) argues that the lack of success of the ENSI programme in Australia was due to a "formidable list of requirements" which had to be met before success could be claimed .... (Oulton & Scott, 2000, p. 490)

Both Walker (p. 155) and Oulton and Scott (p. 490) proceed to argue that the "lack of success of the ENSI programme in Australia was due to 'a formidable list of requirements' which had to be met before success could be claimed" and "given this formidable list of requirements it is no wonder that ... environmental education is marginal in school programs" (Walker, p. 157). They then both present this "set of criteria" or "formidable list of requirements," but with some minor differences, Oulton & Scott's (2000) version being a distillation of Walker's list:

- the recognition of a shared, community-based environmental problem which is solvable by school students;
- school and parental agreement that the environmental problem will become the focus of the curriculum;
- committed teachers, school principal, and community;
- a preparedness on behalf of the teachers, students, and community participants to confront their own values and the values held by others; and
- a teacher with specific expertise in relation to the problem, or an outside expert.

Now, this may actually be a useful list for schools and communities engaging in environmental education. I suspect that most people might agree that together these characteristics would in fact represent worthwhile environmental education. It is in fact very close to a list developed by the Victorian Ministry of Education and adopted as government school policy for a decade (Ministry of Education, 1990). It might even be the kind of list I might compile myself. Some, like Walker and Oulton and Scott, might look at it from afar and think it “formidable.” But all this is beside the point, because this list actually never existed in the project report as “requirements that had to be met before success could be claimed.” The only place this list (as a set of criteria for judging “success” of environmental education efforts) existed is in the writing of Walker and, vicariously, of Oulton and Scott. This list seems to have been interpretively constructed by Walker herself by (presumably) selecting separate features from the range of nine instances of environmental education work described in the Australian report and putting these together herself into a single list. This list was then reproduced by Oulton and Scott, who actually go further in asserting that this list of requirements had to be met “before success could be claimed.” In fact no judgement was made in the Australian report of “success” of the research efforts of the teachers against this (at the time nonexistent) list. Only Walker (p. 156) and Oulton and Scott (p. 490) have suggested the step of judging the success of the reported activities in terms of this self-constructed list of “requirements.”

### *Contextuality and Exigency in Research Practice*

By asserting that there is a systemic failure of research to improve environmental education in schools, and that this failure can be attributed to a particular set of researchers in environmental education, Walker and Oulton and Scott have not recognised that in participatory research, judgements of quality rest on mutual understanding achieved through reflective discourse within the context of the research, rather than on relationships with any universal criteria. There is also a basic methodological issue concerning the issue of generalizability from single case studies: in asserting that this single case demonstrates the *general* failure of critical approaches to research in environmental education, they refer to only one country’s project report (out of 20) located within one project (ENSI), and then generalize from this one instance to the class of instances of which this case is a member. The subjectivist epistemology of interpretive research specifically precludes endorsement of generally applicable outcomes from (single) case studies. To slide from examination of a single report to an assertion that critical environmental education is responsible for the marginality of all environmental education is difficult to sustain.

It is interesting to reflect on how it is that two (sets of) authors could come to the conclusion that critical approaches to research are responsible for the

(alleged) systemic failure of environmental education, and to misrepresent the Australian ENSI report (by concocting a “straw person” list of “formidable requirements”) in explaining this alleged failure. One reason may be their insular focus, in that they have homed in on one just report in a project that produced over twenty such national reports. This is especially surprising given that Walker was for a time the Australian Pedagogical Support Person in the ENSI project and as such would have had access to the full range of member country reports<sup>2</sup> which would have given a much more wide-angled, and balanced perspective on the practice and outcomes of the project and of the role that action research-based approaches to professional development could play in such projects.<sup>3</sup> No mention is made in either article about this rich range of reports.

But there are more fundamental research/methodological considerations to make in relation to the distant appraisal of the work of research project participants. Both Walker and Oulton and Scott seem to presume failure of the project activities of project participants—people who are practitioners in the field of environmental education. Both have acted as arbiters from afar of the success of the “on-the-ground” project practice of environmental educators, with Oulton and Scott (2000) asserting that projects adopting socially-critical approaches like action research “have had the effect of leading into a cul-de-sac” (p. 495). This vicarious assumption of failure could be seen as showing a lack of respect for the judgements of environmental education professionals in difficult times and places and a disregard for the particular social/political contexts within which these professionals conduct their best efforts. This claim is also at odds with their own prescription of “an approach that encourages schools and teachers, working with their own communities to find their own ways of interpreting and enacting environmental education” (p. 495).

To illustrate this point, take two of the projects referred to earlier. The ENSI project was conducted in more than twenty countries and sought to employ action research approaches to professional development to support teachers interested in manifesting in their classrooms what the project describes as “dynamic qualities” (Elliott, 1994; Posch, 1993). A review of the national reports from participating ENSI countries<sup>4</sup> reveals that different teachers in different social and political contexts in different countries express differently their differing social, educational, and environmental values in manifesting their perceptions of the ENSI principles. The reports identify the social, political, cultural, and historical elements that together shape and constrain their environmental education work. The reports describe the best efforts made in good faith by participants working within the exigencies of their own professional contexts. The project has sustained itself for some eighteen years. As recently as 2004, ENSI continues to conduct workshops exploring and adopting action research approaches to professional development in environmental education. It is very difficult to see how these efforts could be constructed as a failure or having lead into a cul-de-sac. If it is a cul-de-sac, it is a very long one with many productive destinations.

The AusLinks project also illuminates this point. Project research in environmental education is necessarily contextual, and participatory research is avowedly so (Lotz & Robottom, 1998; Robottom, 2003; Robottom & Kyburz-Graber, 2000). This is rarely clearer than in the Auslinks project: Le Grange (2003) describes the deliberative choice made by South African participants in adopting participatory action research-based approaches to professional development to engaged social, political and educational issues within the problematic post-apartheid context in South Africa in the mid- to late- nineties. This participatory research project resulted in several valuable outcomes, including greater capacity and confidence on part of many project participants; the greater availability in South Africa of materials and resources from the Australia context; the development of new, contextually relevant materials in South Africa for South Africans; the establishment, extension and deepening of collegial and intellectual networks; and overall a greater sense of what can be achieved through collaborative collegial work involving representatives from a range of tertiary institutions across South Africa. Linkages have established among a wide range of South Africans, and the participating Australian partners, in a field where such linkages did not exist before the project, enabling all the outcomes mentioned above, but also enabling the less tangible benefits of enhanced formal and informal professional and academic conversations among colleagues. Importantly, since the conclusion of this project, a number of South African project participants have advanced to positions of responsibility in the fields of curriculum development and professional development in South African environmental education (Le Grange, 2003).

The significance of the success of these achievements is more fully recognized when viewed against the immediate history of South African social life that existed for several decades through to the early 90s, just before the beginning of this project. This period of South African history saw a minority white government, through the policies of apartheid, systematically oppress and deny educational opportunities for people of colour. Education itself was used as an instrument in developing and maintaining a set of power structures and relationships in which people of colour were severely disadvantaged. The AusLinks project was constructed with a view to addressing and perhaps in part redressing some of these historical inequities in a small way in the particular field of environmental education. It was for this reason that participatory, critical approaches to educational research were adopted as the theoretical underpinning of this activity concerning professional development. It was felt that an approach to research that was characterized by the principles of contextuality, responsiveness and critical praxis was required in order to create the opportunities for previously disadvantaged people to generate their own vision of education and to construct their own curriculum in accord with this vision (Le Grange, Makou, Neluvhalani, Reddy, & Robottom, 1999).

This is an important methodological issue for environmental education: for commentators on project research practice to claim that the work of practitioners is to be judged a failure by virtue of its grounding in critical theory and as representing a dead-end in research is not just inaccurate, and not just grounded in a methodologically inappropriate generalization from a single case; it also demonstrates a lack of respect for the best endeavours of environmental education practitioners who have in good faith and in difficult circumstances brought about significant changes in their practices and the circumstances within which these occur (Le Grange, 2003).

## Conclusions

In this article I have suggested a number of methodological points, including the following:

- it is important to continue to engage in deliberation about the relationship of methodological choice, research-in-practice, research context, and the literature of the field;
- assertions that environmental education is a universal systemic failure, and that such systemic failure can be attributed to any specific research tradition within the now rich range of alternative approaches in widespread use, require more evidential support if they are to be taken seriously;
- it is disingenuous to interpretively construct *de novo* a conceptual framework using selected isolated features drawn from a collection of different case studies and then retrospectively use this framework to evaluate (in terms of “success” / “failure”) the same case studies and the methodological approach that informs them;
- it is a basic methodological principle in interpretive research that it is inappropriate to formulate a generalized assertion about a class of instances from just one instance within that class; and
- when distant commentators on methodology describe as failures and dead-ends the highly deliberative research decisions made in good faith by participant researchers in cultural contexts different from their own, they run the risk of restricting rather than encouraging a field that should be richly contextual—substantively and methodologically.

It is worth noting that a project like ENSI, which overtly adopts action research principles in its approach to professional development, has thrived for over 18 years. In its current form, the project continues to progress in supporting and reporting examples of action research-based environmental education in a number of countries. There is a recognition in this project that precisely because ENSI is an action research-based project, informed by such principles as responsiveness to issues of interest and concern to practitioners themselves,

an interest in practical professional work, and engagement of relationships among theory, practice and context, the methodology is dependent upon a respect for “practical exigency”—that as practitioner-researchers, participants operate within a flux of constraints and opportunities that shape differently the expression of their research (their enacted methodology). An implication of this is that it is much less important to appraise such work against a universal set of standards than it is to recognize, describe, and perhaps celebrate instances of reflective practice (and the new insights these generate) as and when these occur.

## Notes

- <sup>1</sup> This conceptualization arose in discussions with two eminent researchers in environmental education—Dr. Paul Hart of the University of Regina, Canada, and Professor Joy Palmer, University of Durham, United Kingdom—during a meeting of the three of us in the north of England in 2002.
- <sup>2</sup> Including those of Professor Regula Kyburz-Graber, Professor John Elliott, and Professor Peter Posch. Kyburz-Graber was the one-time president and 18-year member of the ENSI project, and has contributed much to the theory and practice of the project (see Kyburz-Graber, 1999; Kyburz-Graber, Gingsins, & Kuhn, 1995; Kyburz-Graber, Rigendinger, Hirsch, & Werner, 1997; Robottom & Kyburz-Graber, 2000). Posch was the driving force behind ENSI for most of its life (Posch, 1988, 1993, 1994a, 1994b, 1997) and with Posch, Elliott provided much of the intellectual support for the action research component of the project (Elliott, 1991, 1993, 1994).
- <sup>3</sup> Action research is a key distinguishing feature of the ENSI project; the project aims to support teachers’ professional development through action-research as a briefing article by a member of the ENSI project’s OECD secretariat affirms (McAndrew, 1994).
- <sup>4</sup> See for example (Axelsson, 1993; Bolscho, 1993; Bulow, Christensen, Jorgensen, Jorgensen, & Karlsen, 1993; Coolsaet, 1992; Keurentjes, Melleger, Pieters, van Rossum, & van der Zande, 1994; Kurtakko & Izadi, 1991; Kyburz-Graber, et al., 1995; Lahdesmaki, 1993; Lara & Pardo, 1994; Losito & Mayer, 1993; McAndrew, 1992; Ministry of Education, 1993; Posch, 1997; Thonhauser, Moosbrugger, & Rauch, 1994).

## Notes on Contributor

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