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Research Methodologies Represented (or Not) in *AJEE*

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As one of the contributors to the first issue of the *Australian Journal of Environmental Education* (*AJEE*) in 1984 (and to a further seven issues between 1991 and 2009), and as a sometime member of its editorial board (1991–1994) and the editorial collective that edited four issues (1999–2002), I have been privileged to witness at close hand its development from infancy to maturity. My particular focus in this brief reflection on the journal's development is on the research methodologies that it has privileged or diminished. In the interests of brevity, I focus in detail only on some tendencies that emerged in the first few issues, with the remainder being dealt with via selective references and impressions.

As the front matter in the first issue made clear, the *AJEE* was not established as a *research* journal per se but rather:

> *to present information and argument which will stimulate debate about educational activities to enhance environmental awareness, understanding and action among all Australians.*

However, in his editorial in the first issue, Bill Carter (1984) explicitly called for research articles to be submitted, although he also expressed a clear preference for a particular type of research. After pointing out that most of the articles in the issue were papers presented at the second national conference of the Australian Association for Environmental Education (AAEE), held in Brisbane in 1982, he commented:

> *Appropriately for the first edition, the articles review and challenge existing concepts in environmental education. Whilst it is hoped that the biennial conference will continue to attract papers of sufficient quality to be published in the Journal, they will, by the nature of most conferences, tend not to include papers of a truely [sic] analytical nature. Such studies which test or evaluate programmes empirically are particularly sought by the editors (Carter, 1984, p. 1)*

Linke (1984) made a somewhat similar point in his concluding remarks at the 1982 conference, which were also published in the first issue:

> *One notable deficiency still in the field of environmental education has been the lack of systematic research on curriculum and teaching strategies … it is a point of serious concern that the intense research activity which accompanied the development and introduction of, for example, the Australian Science Education Project, has been conspicuously absent. The peculiar emphasis which*

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> *environmental education gives to the teaching of attitudes and values, as well as to decision-making skills and opportunities for practical involvement in local community issues, ought to provide a wealth of opportunities for educational research. . . . But so far lamentably little of this extraordinary research potential has ever materialised. (p. 3)*

The majority of the remaining articles published in the first issue were indeed chiefly concerned with reviewing and challenging existing concepts in environmental education, the exception being Christie's (1984) review of the state of arid land management in Australia, which had little to say about environmental *education* as such. Carter's preference for empirical studies is not surprising, given his background as an environmental scientist, but Linke's (1984) preference for 'systematic research' modelled on 'the intense research activity which accompanied the development and introduction of . . . the Australian Science Education Project [ASEP]' (p. 3) similarly suggests a narrow view of what research may entail, given that science education research in the 1970s was largely dominated by quasi-experimental quantitative designs. Was Linke implicitly positioning the remaining papers in the first issue, which had been presented at the conference that inspired his reflections, as something other than 'systematic research' because they did not resemble the empirical-analytic research arising from the ASEP? By 1982, the notoriously conservative *Oxford English Dictionary* (which then determined 'common English usage' by such means as sampling the ways in which words were used in London's *The Times* newspaper) defined research as an 'endeavour to discover new or collate old facts etc. by scientific study of a subject, [or] course of critical investigation', and each of the remaining papers in the first issue, of which there were two by Robottom (1984a, 1984b) and one each by Henry (1984), Walsh (1984) and me (Gough, 1984) was clearly an example of a 'critical investigation'. Henry (1984), Robottom (1984b) and Walsh (1984) offered differing critical interpretations of the implications of emphasising education *for* the environment (cf. education *about* and *in* the environment) as the most desirable quality of environmental education, whereas my article (Gough, 1984) offered a critical analysis of approaches to moral education (including the cultural transmission of environmental ethics), emphasising the limitations of the then popular classroom techniques of values clarification.

Neither 'scientific study' nor 'critical investigation' exhausts the possibilities for what constitutes research. As Reid (1981) argues, research includes *any* means by which a discipline or art develops, tests, and renews itself. Having survived the process of peer review, it seems to me that the critical essays published in the first issue — even if they did not conform to Carter's and Linke's understandings of research — are clearly a means through which Australian environmental educators have chosen to develop, test, and renew their discipline.

I am pleased that *AJEE* did not follow the preferences of its first editor (and influential commentators like Linke) by over-privileging empirical-analytic and scientistic research reports. Indeed, in the journal's second issue, a perceptive essay by Fien (1985) pointed to the more productive partnerships suggested by social and environmental education research, drawing attention to 'international, global, futures, population and vales education (all long established themes in social education) as imperatives in environmental education' (p. 21).

I regret that stereotypical associations of research with empirical-analytic designs were reinscribed from 1987. As the incoming editor Ian Robottom (1987) explained, the 1987 issue had four sections: 'Feature Articles', 'Research', 'Reflections' and 'Reviews':

> *This structure reflects the editorial policy of the new Editor and Editorial Board, which is that each issue of the Journal contains a balance of contributions*

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> *matched to the different interests of members of the environmental education community … (p. 2)*

This was clearly a good intention, and Robottom further explained that contributions to the Research section 'may be of the quantitative, applied science design, the interpretive case study kind, or more participatory action variety …' (p. 2); he also voiced his own 'preference … for the more accessible, descriptive examples of research that tend to emanate from case study and action research' (p. 2).

Nevertheless, these intentions and preferences were undercut somewhat by the actual contents of these sections in ensuing issues. For example, in 1987, the essay with arguably the most significant implications for environmental education research — Di Chiro's (1987) 'Applying a feminist critique to environmental education' — was located in the Feature Articles section, and the sole research report was Johnson and Fensham's (1987) study of students' perceptions, which relied on quantitative data from word association tests and responses to environmental photographs. In the 1988 issue, the categorical sections were further confused by the sole research report being another quantitative study deploying a pre/post questionnaire design, yet two reports prominently titled as case studies in the table of contents were described in the editorial as 'Reflections'.

It should also be noted that significant commentaries on research issues could also be found in the Reviews section, which, as in most journals, is typically positioned at the end of each issue, although reader-response surveys show that reviews (especially essay reviews) are usually the most read articles. For example, in a review of Lacey and Williams' (1987) *Education, Ecology and Development*, Greenall (1988) drew attention to the imperatives for adopting a socialist ('red-green') position in environmental education research.

The four-section structure was abandoned from 1990 to 1995, with only Feature Articles and Reviews being differentiated. The word limit agreed for this reflection prevents me from going into further specific details, but my overall impression (to which I would welcome challenges) is that the majority of articles that editors or authors identified as research in subsequent years could be described in terms of the methodological orthodoxies (paradigms) signalled in the earliest issues; namely, quantitative (positivistic), case study (interpretive), and action research (which aspired to accommodate critical perspectives). Di Chiro's (1987) advocacy for critical feminist approaches remained the only substantial challenge to these paradigms in *AJEE* until I argued for poststructuralist approaches (Gough, 1991). I regret that neither feminist nor poststructuralist approaches have had a great deal of purchase in the pages of *AJEE*, although there have been some honourable exceptions, including Barron's (1995) feminist poststructuralist analysis of the constitutive power of environmental discourses, Whitehouse and Taylor's (1996) feminist critique of senior secondary environmental studies courses, and Ferreira's (1999/2000) use of Foucault's work on the formation of the self as an ethical subject.

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