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Citation for published version:

Nicol, R 2013, 'Fostering environmental action through outdoor education.', *Educational Action Research*.
<https://doi.org/10.1080/09650792.2013.854174>

Digital Object Identifier (DOI):

[10.1080/09650792.2013.854174](https://doi.org/10.1080/09650792.2013.854174)

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Peer reviewed version

Published In:

Educational Action Research

Publisher Rights Statement:

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10.1080/09650792.2013.854174

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Fostering environmental action through outdoor education

Abstract

In this paper I review my own teaching effectiveness specifically relating to a postgraduate university course. Whilst the theoretical material promotes action there is no formal requirement for students to undertake any leaving me to wonder if my teaching has had any effect beyond the limitations of the course. I conducted a small-scale enquiry involving a recent cohort to explore this. An organising framework of single-, double- and triple-loop learning is introduced to distinguish between shallow and deep learning based on the differing degrees of intensity in the way that students reported their learning experiences and actions. The reflexivity shown by students who are wrestling with concepts of self and agency is consistent with what has been termed 'inquiry as stance'. I have learnt that agency lies not just in the actions of students but the way in which they approach, internalise and externalise their own teaching and learning.

Key words: Outdoor environmental education, concept-based practice, single-double- and triple-loop learning, epistemological diversity, inquiry as stance.

Background

In the year 2000 I inherited a postgraduate university course which I still teach annually. It is a 20-credit course which is part of a masters programme where 180 credits are required for a graduating curriculum for an MSc in Outdoor Education or an MSc in Outdoor Environmental and Sustainability Education. When I assumed responsibility the course was called 'Environmental Education: Individual and Institutional Perspectives'. In 2005 I changed the name to 'Outdoor Environmental Education: Concept-Based Practice' (OEE: CBP). There were several reasons for doing so and they are reflected in the compound nature of the title.

One of the reasons was that I had found myself teaching about the importance of education outdoors in a city, and in a lecture room, which limited the multi-sensorial experiences that were being discussed. Thus the nature of teaching and learning, with its focus on the outdoors, was incongruent with the spatial setting. Not only did I find this indoor delivery contradictory, but year-on-year each cohort of students reported the same through formal and informal evaluations. I decided to relocate the course to the University's residential centre in **(enter location after review)** and run it as a 5-day residential block. The centre is set within its own gardens and there are woods, juniper bushes, marshes, bogs, mountains and rivers all within walking distance. This setting more clearly provided opportunities that are consistent with the first part of the title – 'Outdoor Environmental Education'. Another reason is that the history of outdoor education demonstrates what I have critically referred to

elsewhere as *post hoc rationalisation* (**E,P and T author reference to be added after review**). The summary of this idea is that as a sector the aims and claims of much outdoor education practice have become conservative with a vision guided more by sources of funding than pedagogy. Thus the term 'concept-based practice' is intended to reorientate this in order for theory to play a greater role in guiding practice.

Course rationale

The course is intended to demonstrate that throughout the twentieth century, and up to the present day, environmental education has undergone change, and that concepts of sustainability education have begun to emerge. The course material acknowledges these changes. Students are asked to consider that people are both the problem and the solution to most environmental problems and that economic, political, social and cultural behaviour are central to ideas about sustainable living. Consequently awareness of the social, economic and political dimensions of 'sustainable development', and its synonyms, is crucial in developing a deep understanding of issues. Furthermore, this has dual implications for students who; first, will be required to develop their own programmes of outdoor environmental education in their own careers; and second, will have to consider the implications that such professional aspects have for their own personal lifestyles if they are to adopt the position of role models. Differing definitions and underlying assumptions provide starting points from which course participants are asked to explore the role of outdoor environmental education in relation to values, attitudes and behaviour towards and within nature.

During the course students explore ideas from environmental philosophy such as deep ecology, social ecology and systems theory. They also engage with educational philosophy such as experiential approaches to learning, place-based education and bioregionalism. The teaching involves some indoor lectures from me where I encourage group discussions of complex ideas. It also involves outdoor work where I endeavour in my own teaching practice to demonstrate ways in which theory 'shows up' in practice. The students often report that the highlight of the course is the opportunity to plan and deliver, to their own cohort, outdoor environmental education activities run in the spirit of 'concept-based practice'.

The course is organised around Peter Reason's and John Heron's framework of epistemological diversity (see for example Reason 1998 and Heron 1996). This framework comprises experiential knowing, presentational knowing, propositional knowing and practical knowing. This framework will be discussed more fully in due course. For the moment I would like to draw attention to the aspect known as 'practical knowing'. This is because Reason's work is grounded in the tradition of action research. By linking concepts of environmental education, sustainability and action research what I am trying to achieve in my course is nothing short of Noffke's (2009, 6) ambition that my

students recognise 'the need for educational responses to profound structural changes in society (and that education can) play a role in building a...new social order'.

Written student evaluations have regularly included comments such as 'inspiring', 'fantastic' 'thought provoking' 'great guidance and teachings' and 'excellent'. The course has been nominated by participants for the **(insert author institution after review)** University of Students' Association annual competition within the category of best course (2012). Through their official reports external examiners have repeatedly referred to the quality of teaching as 'outstanding'.

Despite having much to be pleased about in terms of teaching and learning it has always been the case that each year, at the end of each course, I have been left with a deep sense of satisfaction but also frustration. The satisfaction is no doubt linked to student feedback and my own impressions of what I consider to be a 'good' course. However it is the frustration that is the focus of this paper. This frustration is clearly linked, at least in mind, with definitions of action. I have ended up asking myself questions like 'are the student responses not simply indicative of them having a good time'? Dewey (1963, 27) said that learning experiences should be 'more than immediately enjoyable (in order to) promote having desirable future experiences'. Jonas (2011, 119) warns of 'sugarcoating' which 'may make the curriculum pleasurable to the students in that they will have temporary enjoyment, but it will not produce lasting interest, and therefore no learning'.

If the learning that is taking place is really as good as the students are reporting then how are these experiences being translated into actions in keeping with Noffke's ideas of moving towards a new social order? This has led me to ask myself further questions around the nature of action. Are actions supposed to happen within the 5-day period of the course, or do they include things that happen afterwards? Also, what sort of effects might reasonably be expected from a 5-day course? This in turn raised questions of agency. Whilst we were together as a group was our agency limited to 'us the group'? If this is the case then when the course finished so too did our potential to act together (unless that agency was purposely maintained after the timetabled course, something that I have not done in the past). So, is it the case that the true nature of agency, in this case, is that of the individual and their potential to work with other groups beyond that of my course?

The students

With questions like these largely unanswered I decided to conduct a small-scale enquiry involving one cohort because what was significantly absent from my own impressions was the student voice after graduation. All 24 students

who attended the course in November 2009-2010 were contacted on the 2nd of June 2011. It is normal practice that records are kept of student employment and I knew that positions had been found in the public, commercial, voluntary and charitable sectors and ranged from posts such as residential outdoor environmental education centre teachers and managers, indoor facility education officers, outdoor environmental education therapists, school teachers and teaching assistants, outdoor instructors and some went on to further study (PhD and PGDE). The different countries in which they are employed included, the UK, US, Australia, Canada, Switzerland and a country in southeast Africa. Seven months had elapsed since the course ended and marks had been awarded and approved so there was no reason for my request to be interpreted as grade-related.

In the first instance I contacted all of the students by email. I began the email by enquiring after their well-being then wrote:

You will remember that during this course, and for your assignment, I introduced Peter Reason's 4-point epistemology model which described experiential, presentational, propositional and practical knowledge. You will remember too that as far as Reason is concerned the learning cycle is not complete until action happens (i.e. the practical knowledge). I would therefore like to ask about any of your own actions that have occurred since November 2010 when the course finished. Specifically I would like to ask:

1. Can you name and describe ANY environmental action that you have undertaken since November in your personal or professional life (it is up to you to decide for yourself what an environmental action is however 'little' or 'big')?

2 Are you able to attribute this action (or these actions) to the course Outdoor Environmental Education: Concept-Based Practice? Please describe how confident you are in making this attribution e.g. could there be other reasons too?

Please note that I am making no judgments here. If no actions have occurred then this is just as important for me to know, and so if no actions occurred, please say so.

There are two reasons for me wanting to ask these questions. The first is that I am keen to know for my own teaching practice in relation to Reason's model. I am also considering writing a research article for a journal. In all respects your responses will be treated with complete anonymity.

If there are any questions about the task please do let me know.

If you are able to respond as soon as possible but by 16 June this would be most helpful.

After the deadline elapsed I wrote two reminder emails and eventually received replies from ten students. Not only did the reminder and extension of the deadline increase the response rate, some students took the opportunity to respond a second and third time. This table indicates the students that responded, how many replies they provided, the wordage of each email, and then the total wordage provided by each student.

Table 1: Student email responses

Student	Number of Replies	Number of emails/words	Total words
Caroline	3	Email 1, 1572 Email 2, 120 Email 3, 1804	3496
Lorna	1	Email 1, 95	95
Fiona	2	Email 1, 400 Email 2, 311	711
Julie	1	Email 1, 396	396
Ken	1	Email 1, 138	138
Meryl	1	Email 1, 599	599
Theresa	1	Email 1, 396	396
Alison	1	Email 1, 1433	1433
Thomas	1	Email 1, 1463	1463
Anita	1	Email 1, 839	839

The reflexive self

As mentioned above, the starting point for this enquiry was my own frustration around the potential of my course in relation to action. Before introducing the data there are some clarifications to be made around what it is I am trying to research. These clarifications relate to the broader theoretical context within which the data will be considered. Van Manen (1995, 43). states that ‘while on first sight any particular action may seem singular in meaning, intent, and structure, action really is multi-layered, multi-dimensional, multi-relational, multi-perspectival. The meaning of any teaching act is therefore interpretable in a variety of ways’. This point is particularly relevant to this enquiry because the course material is about sustainability which is itself a contested concept (Reid 1995) and van Manen could easily have had sustainability in mind when he described action.

Furthermore McNiff and Whitehead (2009, 9) have pointed out that 'action research reports need to make the point consistently that doing action research is problematic because the underpinning thinking is problematic, especially about values and logics'. Once again when it comes to sustainability values and logics are regularly contested not least because in envisioning the future there is no real consensus about what a sustainable world looks like (Davison 2001).

In summary I conducted an investigation into a course where the content is highly problematised through a methodological worldview which is itself highly problematised. To search for singular, or even simple, truths amongst this complex world would be to deny the existence of multiple realities. As a teacher and learner informed by environmental philosophy I locate myself within this complex world of multiple realities. I accept that any educational intervention needs to embrace it, and that anything less simply ends up mistaking or misrepresenting the world as it is.

As a researcher I am setting out to understand my own practice as a teacher, and to examine if I actually make a difference. I considered two ways that I might have proceeded in conducting this research and both hinge on what is meant by 'making a difference'. One way would have been to evaluate my teaching against the stated learning outcomes of the course (including the 4000 word written assignments the students are required to write). The assignment task is designed to give the students opportunities to discuss ways in which the practice of outdoor environmental education can address social and environmental issues, something that they may not have thought of before in terms of action competences. However I ruled out this possibility because this would not be action research because; firstly, the learning outcomes are largely based on propositional knowledge (e.g. 'On completion of the course students will have explored, and be aware of assumptions that underpin, a range of theoretical positions and their implications for environmental education'). Secondly, whilst the students sometimes provide examples of actions in their assignments they are generally presented speculatively (e.g. 'something that I would like to do is...' or 'when I get my first job in outdoor environmental education I will...').

This meant that if I wanted to understand my own practice in terms of actions then I needed to put aside the formal requirements of the curricular materials because there is no action component required. As soon as I began to look at students as having careers and spheres of influence beyond the course I could then begin asking questions that did not rely on the propositional nature of the quality standards set by the institution. In summary, institutional standards ensure that my course provides opportunities for students to engage in experiential, presentational and propositional aspects of knowledge. However, to avoid a reductionist epistemological position I sought to define valid action (practical knowing) as something that 'must be grounded in our

experiential, presentational and propositional knowing' (Reason 1998, 44). In other words if my teaching practices are to be deemed successful in these terms some form of action should occur from the experiential, presentational and propositional activities that I have so carefully designed.

The 4-point epistemology defined

Experiential knowing happens 'through direct face-to-face encounters with person, place or thing; it is knowing through empathy and resonance...' (Reason 1998, 44). This definition helps explain why I relocated OEE: CBP from a lecture room in a city to a place where students could be immersed in direct experiences of nature. The need for this, as Orr (1993, 18), amongst others, have stated, is that '(environmental) education will, first, require the re-integration of experience into education' and more specifically that 'we experience nature mostly through sight, sound, smell touch and taste - through a medley of sensations that play upon us in complex ways' (Orr 1994, 6).

Because experiential knowing relies on direct experience of the natural environment then there needs to exist a means of identifying quality experience. As Dewey (1963, 25) warned 'the belief that all genuine education comes about through experience does not mean that all experiences are genuinely or equally educative. Experience and education cannot be directly equated to each other'. On OEE: CBP the students and I begin integrating experience and reflection through 'presentational knowing (which)...emerges from experiential knowing, and provides its first expression through forms of imagery such as poetry and story, drawing, sculpture, movement, dance and...sharing of the experience' (Reason 1998, 44). Course participants are required to read Reason's paper to provide a theoretical understanding of the experiential activities we undertake outdoors. I then encourage the students to reflect on their own experiences. Here I am using direct experience as a medium to relate mind and world as the individual endeavours to externalise and share their experiences through talk, text or image with each other.

However, direct experience and presentational aspects alone cannot convey an understanding of the abstract and symbolic world in which we live. To understand the complexity of sustainability the students have to be able to project their thinking beyond the context of their immediate sensorial world if they are to understand, for example, the science of climate change. This introduces a third aspect of the 4-point epistemology which involves knowing 'about something through ideas and theories, and is expressed in abstract language or mathematics' (Reason 1998, 44). Propositional knowing allows the students to explore the world beyond that of their experiential and presentational knowing. In this way they can critically evaluate text, propositions and theories, looking for strengths and inadequacies and develop

their own theories.

The pinnacle of the 4–point epistemology is practical knowing which is knowing ‘how to’ do something and is expressed in a skill, knack or competence. John Heron, who has collaborated with Reason on the development of this extended epistemology, has said that practical knowing

presupposes a conceptual grasp of the principles and standards of practice, presentational elegance, and experiential grounding in the situation within which the action occurs. It fulfills the three prior forms of knowing, brings them to fruition in purposive deeds, and consummates them with its autonomous celebration of excellent accomplishment (Heron 1996, 239).

Thus it is both Heron and Reason’s view that the purpose of knowledge is to develop practical ways to engage with the world in order to change it. It is to the nature of these actions that I now turn.

A framework for analysis

The analytical framework I am about to present is designed to highlight different dimensions of Reason’s (1998) and Heron’s (1996) practical knowing. Because of the spatial, temporal and definitional complexity of educational work in relation to environmental sustainability generally, and the situated nature of these students’ employment specifically, I will use a framework that differentiates between types of data under the headings of single- double- and triple-loop learning.

Data presentation

Action

For McNiff and Whitehead (2009) the purpose of action is something to do with the improvement of a personal or social situation. In reviewing the data I am looking for any self-reported actions that the students themselves attribute to the 4-point epistemology and where ‘improvement’ is apparent? The use of single-, double- and triple-loop learning as described by Marshall et al. (2001) is helpful here because it provides me with an organising framework to distinguish between shallow and deep learning. Common to the three loops is that they all require people to engage in processes of action and reflection. However, the different levels show the varying depths that can be achieved. Single-loop learning occurs when people realise ‘that their behaviour may have been inadequate in some way...to bring about the outcomes desired’ (Marshall et al. 2011, 35). Double-loop learning moves the learning towards deeper environmental action because it requires more than changes to individual behaviour. It includes using theories in action to extend the boundaries of individual agency to bring about changes in wider spheres of influence. Marshall, et al. (2011) argue that sometimes single- and double-

loop learning are insufficient and point to the possibilities inherent in triple-loop learning.

Triple-loop learning takes us a stage further, to attend not only to our behaviour, or our thinking and strategy, but to our purposes, identity and understanding of the situation as a whole. Triple-loop learning invites us to let go of certainty, regard little as fixed, treat our own purposes with curiosity, and to attend to the interplay between different ways of seeing the situation, different strategies and different behaviour choices. Above all, a person fully engaged in triple-loop learning will be *as* interested in disturbing taken-for-granted perspectives and habitual actions, in engaging as many people as possible in an open learning process and in the opportunities for significant transformation, as they are in the immediate practical outcomes (Marshall et al. 2011, 35).

Marshall et al. (2011) make the case that single-, double-, and triple-loop learning are not only related but integrated. However, for the purposes of coding and analysis I will treat them as discrete entities and then return to their integration later. In summary I will be using these terms to explore individual agency where the agency I am referring to is defined as 'the capability of the self to take action that will have an impact on a social situation' (Somekh 2009, 371). The following descriptions have been summarised from the literature. They are presented tentatively and will be further developed as the data emerge.

Single-loop learning (small scale change) - where people engage in lifestyle choices and are guided by following rules in taking actions.

Double-loop learning (medium scale change) - where people review and question assumptions about their lifestyles and engage in a process of values clarification.

Triple-loop learning (large scale change) - where the transformation of peoples' lifestyles takes place and paradigm shifts becomes possible.

Single-loop learning

Five of the ten students self-reported examples of what might be termed as single-loop learning (Lorna, Julie, Meryl, Theresa, and Anita). These were expressed as tangible personal actions such as buying local food to minimise food miles, minimising personal travel miles by walking and cycling instead of using a car, using a train as opposed to flying, joining environmental organisations, recycling more waste both in terms of quantity and diversity (e.g. from shoes to batteries), minimising and prioritising water use (in a drought area), composting food waste, volunteering with environmental

organisations, attending protest demonstrations and using activities learnt on OEE: CBP in their current employment. This appears to show that as a result of the course these students have in Marshall et al.'s (2011) words deemed their behaviour inadequate in some way and have subsequently attended to this by engaging in new activities that demonstrate observable behavioural change.

Single-loop learning with vicarious aspects

There was also evidence that students were beginning to share their new ideas with other people (which I have labeled 'vicarious'). In this way their own single-loop learning was being purposely shared in order to affect the behaviour of others (Lorna, Theresa and Anita). Lorna, who remembered watching a DVD on climate change on OEE: CBP questioned the motives of a friend who found employment with a large international petroleum company and found it 'shocking' that the friend cared only about earning money. Another student who was already a committed protester urged classmates to attend a demonstration and reported 'there were certainly individuals that came along to the demo that would not have been there had it not been for the concept based practice course inspiring them to take some kind of action' (Theresa). The student qualifies this stating 'although I am also fairly certain that for some this action was a flash in the pan and the enthusiasm for environmental action spurred by the course soon waned'.

In talking about the exciting opportunities in their new job Anita referred to OEE: CBP.

Specifically, I can think of one activity that took place during concept-based practice that I have tried to emulate with my own group (reading us a story atop a hill to create a sense of place). For me, that moment was unlike anything I had experienced in the outdoors before and I can still recall that landscape, the way that time felt, and how that affected me internally. It was at that moment I realised how powerful storytelling can be in connection to place and getting others to care for a place.

Anita then goes on to explain how storytelling is now a central feature of her own work.

What I can determine from these data is that the three students have identified in others what Marshall, et al., (2011) have termed inadequate behaviour and responded to this with an educational intervention. Furthermore, they acknowledge that the course has in some way provided inspiration for them to act in this particular way.

Double-loop learning

According to Flood and Romm (1996) double-loop learning, like single-loop learning, can also be task orientated. However a key difference is that it deepens learning because it requires more than changes to individual behaviour. In double loop-learning people are confronted with clashes in values where choices of action are not always clear. In a personal or interpersonal situation this might mean choosing between courses of action where such resolutions may also provide personal discomfort (e.g. psychological, physical or emotional) in deciding an appropriate course of action.

Four students (Caroline, Fiona, Alison and Thomas) referred to an incident during the course that appears to fill these criteria. It is important because this incident affected not just those who responded to my research request but the whole cohort. The expedition referred to is a compulsory part of the MSc Outdoor Education programme (author note: in my initial email I had asked for actions that had occurred *after* the programme had ended. This incident occurred before the students graduated and I have included it here because it was reported often and because of the specific reference to my course). It is both self-programmed and self-led and the series of timetabled expedition meetings are often characterised by their fiery nature as the group moves to resolve personal ambitions within a group plan that is acceptable to all. Fiona continues:

After we watched the Age of Stupid DVD in the middle of the course, everyone was feeling quite emotional and the film was quite shocking. Anyway, for some reason we picked this moment to have an 'expedition meeting' within the...group. At this point we were torn between Norway and Bulgaria. The meeting turned into a huge argument between certain 'strong minded' members of the group about the whole philosophy of the expedition. For example we debated transport, the idea of exploring another country, when we didn't know the country we were in at all (**add name of country after review**). We all felt really strongly that something had changed in the last few days in terms of realising the pointlessness of using air travel to go abroad for the expedition. I can say this was a direct influence of all that we had been learning on the course. There had not been this atmosphere and intense feelings at any other expedition meeting up until this one. During that meeting (up at **name of centre after review**) we had a unanimous U-turn and decided to walk in (**name of country after review**) instead and as it turned out we had no regrets at all. When I think back now, if we had not convened the meeting in the middle of the Concept-Based Practice Course, there is no other time I can

think of when the route we were planning on would have changed so dramatically. This was due to high emotions regarding our ecological impact and footprint.

There are certain reasons that make me want to categorise this as double-loop learning. One is the clash of values that has taken place in the group from one meeting to the next. This was about more than simply following rules. Whereas in single-loop learning the actions appear to be relatively unproblematic here the course of action becomes contested and unclear. In order to act as a group the individuals concerned have been required to reveal their values and argue in support of them. Furthermore it is notable the way in which students referred to practices that they believed unsustainable (e.g. transport choices, travelling abroad) as their main deductive argument in mediating between choices. Finally, the reference to the importance of emotional responses provides some evidence that students were not simply employing selective reasoning to justify their own desires. Instead they were engaging practically in the concept of epistemological diversity through the expression of emotions, as well as rational arguments, in making lifestyle choices.

One of the key factors in the expedition incident is that agency was determined by a group of people who were familiar with each other because of their studies together. However, I was also interested in individual agency where students graduated from the programme and found themselves in a work setting. The locus of control, and spheres of influence, are very different between the former and the latter.

Julie reported:

... I helped to edit a report on an Outdoor Environmental Education program implemented at an education centre in (my country). In doing so I used my background of the epistemology model to help staff in improving reporting of their programmes. For example, the importance of not only reporting on activities done i.e. went on a hike, but also the experience of participants, details of their presentations, their comments and what was achieved or not...

At first sight this appears to encompass the hallmarks of single-loop learning, something that Argyris and Schön (1996, 20) have termed 'instrumental learning' where new skills are learnt through incremental improvement. Key to this definition is that the values underpinning actions remain unchanged. However, it becomes clear that double-loop learning is actually taking place as Julie continues.

...I thought these aspects to be obvious, but I came to realise that

it is so when one has an insight of ways people learn...

There appears to be a recognition that simply introducing the epistemological model to colleagues is not on its own sufficient to make changes. This is an important finding because even though the model embraces epistemological diversity, whilst it remains in written form it remains characteristically non-diverse. In other words, as an idea it is primarily theoretical and absent of the diversity that it advocates. Julie has clearly grasped this because she appears to be saying that to fully implement the model she needs to understand people and how they learn. Furthermore she needs to work with them and not impose rules upon them. Further clarification is found in the Argyris and Schön (1996, 21) statement that 'double-loop learning may be carried out by individuals, when their inquiry leads to change in the values of their theories-in-use or by organisations, when individuals inquire on behalf of an organisation in such a way as to lead to change in the values of organisational theory-in-use'. The data here do not provide any indication as to whether any change in organisational theory-in-use has taken place but this is outwith the scope of this research. What the data do show is that teaching material used by me on OEE: CBP have been incorporated into the practice of this student who is seeking to influence organisational values through double-loop learning.

Triple-loop learning

In addition to Marshall et al.'s (2011) definition provided above, Torbert (2006, 207) adds that 'Triple-loop learning transforms not just our tactics and strategies but our very visioning, our very attention. This can be experienced as an epiphany, or as occasional epiphanies or as semi-continual frisson of analogies among moments of self-observation-in-action'. Three students (Caroline, Christine and Thomas) provided evidence that I would like to consider in relation to these definitions, as they appear to incorporate much of these descriptions.

Caroline who is deeply passionate about activism and has previously been employed as an environmental lobbyist describes the impact of Reason's epistemological diversity.

I've always found it incredibly difficult to tolerate other points of view. Even though much of my work as a political activist involved working with people that held opinions different from mine, I struggled to tolerate how people (and groups of them nonetheless!) could continuously contribute to mounting global catastrophe...the material we covered on Concept Based Practice, helped me think through a more... nuanced? view as to how people come to think, act, and learn. It helped me think about what people have learned, what they have experienced, and how these things have contributed to

why they think differently than I do. These underlying philosophies of learning/education...have made much more comprehensible to me WHY people can think and act the way that they do.

Caroline then moves from talking about her previous work as an activist and talks about coming to terms with the incredible diversity in socio-political viewpoints and backgrounds amongst her fellow students, some of which she would once have been intolerant. She described these revelations as 'groundbreaking'.

Well, absolutely groundbreaking may be too strong of a statement. Or is it? I wish I had time to write a bit more of a narrative to give shape to what I feel has changed in how I see the world.

Caroline then provided two short anecdotes that highlight the combative nature of her previous advocacy work and then provides this summary.

I would say that my understanding of what a 'fight' is has changed. Maybe it would be better to say that it has expanded. To put it succinctly--the Concept Based Practice material...has given me the capacity to understand where people are coming from...This does not mean that I am any less of an ardent activist. It does mean that I'm not eaten up inside when people say stupid things. Yes, my ontology is showing, but as an activist I'm pretty okay with that. In a contradictory way, I feel like I'm now trying to allow people to be individuals by acknowledging how their experiences have shaped them... So, when people express their 'opinions' of environmental issues I'm able to attempt to think through what has led them to hold those opinions, and to understand how complex that process is, and how I may or may not be able to...intervene...in that process.

Thomas described how he had specifically chosen to work in a residential education centre in a very remote area which involved personal sacrifice and that this sacrifice would not have been possible without his experiences on the course (author note: in subsequent correspondence Thomas explained that he did not mean to present himself as a martyr so much as someone willing to make consumer purchases and lifestyle choices involving family and friends that were not always convenient and that he was now better able to explain his choices from both a professional and an environmental point of view as a result of the course). He continues,

...it is 'environmental action' as you put it because a) my own impact on the environment is, I believe, greatly reduced by living there (I did however fly halfway round the world to be there, and will fly home too), but also because b) I work with kids using skills and

ways of thinking I learnt on the course to give them opportunities to make different decisions to those others might make, and to help them form aspirations about the kind of life they want to live. Certainly (Concept-based practice) allows me to talk about it; the ideas inform my actions, and I want the kids to take environmental actions too. I believe more strongly now than before that shared experience and knowing how, group decision making, and living in a vigorous community is vital to an individual's capacity for meaningful change (I wish that I had known about (name of centre) when I wrote my assignment!). I also think that the skill, knowing how or practical knowledge that Reason writes about is for many a source of fulfillment, self-esteem, and is possibly the only way that a democratic society can achieve large scale change.

Meryl began by listing an extensive range of single-loop learning actions and then ended with the following statement.

One thing that changed after the course is in the force of my environmental beliefs. I am not as passionate as I was. Milder, more gentle I would say.

The data from Caroline and Thomas exhibit elements of triple-loop learning where it becomes clear that they are using their learning on OEE: CBP to review their behavior in the past. As a result of this they then demonstrate tendencies towards the sorts of transformative experiences central to Marshall et al.'s (2011) definition of triple-loop learning where behavior is modified through new thinking and learning, revised strategies and purposes, the letting go of certainty, the seeing of phenomena in new ways and the disruption of taken for granted perspectives.

However, Meryl's testimony is somewhat different. When I first read that as a result of OEE: CBP she was less passionate about her environmental beliefs I felt disappointed in that the course material might have been having the opposite of my intended effects. I could interpret this in one of two ways. Here was someone who was a committed activist beforehand so perhaps the course had led to feelings of disempowerment. Clearly, when the course content is to do with the confrontation of personal and social values the consequent emotional responses may well become overwhelming and far from inspiring action the course might foster action paralysis. On the other hand it is also possible that the clear, albeit monolithic, instructional guidance that informs advocacy has in Meryl's case been blurred by a greater understanding of diversity in learning processes. If this is accurate then the milder and more gentle qualities that Meryl detects in herself could be due to transformative experiences not unlike those that Caroline expressed. Furthermore, this would be compatible with epistemological diversity. However Meryl did not

elaborate on this matter and I do not wish to speculate further.

So what?

I have presented the data within an organising framework of single- double- and triple-loop learning and this has allowed me to discern between various types of data. The framework allowed me to interpret and categorise data based on differing degrees of intensity in the way students reported their learning experiences. These differences helped me to understand different ways in which learning on the course affected individuals. However, further clarification is required because the framework itself could give rise to misinterpretation. For example a certain mindset might perceive a linear progression from single- (instrumental acts) through double- (involving values change) to triple-loop learning (something transformational). In this view triple-loop learning would be a higher educational ambition than single-loop learning. Whilst the thought of providing life-changing experiences for learners is very appealing the model is more complex and there is no suggestion of linearity, from those authors mentioned already, who have adopted it for their own purposes.

This complexity is easily explained and understood in an educational setting by returning to Reason's epistemological diversity framework and particularly the concept of experiential learning. Central to learner-centred approaches is the concept of differentiation which has been defined as 'a flexible approach to teaching that matches content, process, and product based on student differences in readiness, interests, and learning needs' (Woolfolk 2010, 477). Thus even if my teaching vision is to aim towards transformative experiences I need to be constantly aware of matching these ambitions with those of the students' own needs and readiness. From the epistemological position presented this is not a problem because the focus becomes how experiences are experienced (from both the learner's and teacher's perspectives) and not how teaching material is taught (only from the teacher's perspective). Thus, whilst my teaching does aim towards transformation, the principles of experiential learning offer different points of intervention for the learner to engage with.

The integration of Reason's model of epistemological diversity with that of single- double- and triple- loop learning has helped me explore the effectiveness of OEE: CBP where effectiveness is defined within the context of experience, learning, action and behavioural change. For example I have categorised certain environmental actions that at first sight might be defined as instrumental, fairly mindless and conducted by rote. Some such actions reported by the students (e.g. buying local food, minimising personal travel miles, joining environmental organisations, recycling and composting food waste) may be readily identified with how Flood and Romm (1996) have associated single-loop learning with task-orientated interventions. Where

someone is seen to be responding to an external stimulus (e.g. turn the lights off please, or stop flying so much) they might simply be 'following the rules'. To be clear the data do not provide me with evidence that this is in fact true. All I am able to conclude from these examples is that the students in describing these actions did not articulate the values context in which they were operating. In these cases I am left unable to attribute any self-reported moments of epiphany or transformation. The key point I would like to make is that actions such as these need not be simply mindless acts because in their performance they may well lead to new ways of thinking. In this I take my lead from Suzuki (1997, 214) who states that 'action invariably precedes a profound shift in values'. If this is the case then there is good reason to suggest that students reporting what I have categorised as single-loop learning are effectively engaged in environmental action.

In terms of double-loop learning one of the examples I provided was the clash of individual values during the expedition planning meetings and how the group resolution came about based on environmental principles. This is consistent with how Argyris and Schön (1996, 21) define double-loop learning where it 'results in a change in the values of theory-in-use, as well as in its strategies and assumptions'. The third categorisation of environmental action that I have discussed (triple-loop learning) involves those students who have reported experiences that may be associated with Torbert's (2006) moments of epiphany or Marshall, et al.'s (2011) opportunities for transformation.

Was this research worth doing?

In sharing my own experiences of this course and presenting data from the students I have tried to be careful in the claims I have made. If triple-loop learning is the dénouement of single- and double-loop learning (Flood and Romm 1996) then I can unequivocally claim that transformative experiences are the ultimate goal of my teaching ambitions. The importance attached to triple-loop learning must be carefully contextualised because as Marshall et al. (2011) warn it is difficult to sustain because of its enormity and the demands it places upon our attention in an everyday setting. There is also the prospect that constant transformation might become a ceaseless end in itself rather than a means to consider lifestyle choices. Consequently, the instrumental acts of single-loop learning are important because they reify existing values. This is important because it means that existing values (personal, cultural and social) are not ignored but become a conscious part, and starting point, of the teaching process. Double-loop learning is important because it provides opportunities for values clarification and change. Triple-loop learning is important because it recognises the scale of the long-term challenge and the possibilities for change. In terms of environmental sustainability such changes require different points of engagement in terms of thinking and action (Kemmis 2009). This is why Marshall et al. (2011, 35) conclude that it is the integration of the three loops that provides learning opportunities that may be

‘potentially radical, transformational and profoundly relevant for the exploration of issues of justice and sustainability where everything is uncertain and open to different interpretations’.

Furthermore, as an educator committed to the principles of experiential learning it is not my prerogative to provide transformative experiences. In fact it is a logical inconsistency to suggest that I can provide any experience at all. I may well seek to influence experience through the ideas we work with as a group. However, the way in which these are internalised and made sense of lie ultimately with the learner. This distinction is particularly important for any claims I have made of my course not least because it is short (five days) and it is not designed so that actions are evident within its duration. I have come to conclude therefore that agency for my course lies primarily with students as individuals.

It is this conclusion that leads me to try and answer whether this research justified the time and effort it took. I have had to consider carefully what the experiences on the course meant for the students. In so doing I have come to understand something more clearly. Several students reported how the experiences on the course affected them in terms of their own views on teaching and learning. This is important because the vast majority are following pedagogy-based career paths. The reflexivity shown by those students who are wrestling with concepts of self is consistent with what Cochran-Smith and Lytle (2009) have termed ‘inquiry as stance’. This is an epistemological position that requires ‘teachers and student teachers working with communities to generate local knowledge, envision and theorize their practice, and interpret and interrogate the theory and research of others’ (Cochran-Smith and Lytle 2009, 44). The ideas underpinning ‘inquiry as stance’ provides clarity for me when I think about my own work. The agency that I have sought to identify in this paper lies not just in the actions of students but the way in which they approach, internalise and externalise their own teaching and learning. An essential characteristic of this work is that it helps people to theorise their own practice which mirrors precisely my own thinking in operationalising the term ‘concept-based practice’.

The extent to which I have been successful in achieving these goals is difficult to identify precisely. For this reason any claims I have made remain tentative. Also students bring with them an incredible range of life experiences on arrival and end up working in careers where ideas can be incalculably remote from those discussed in ‘the ivory tower’. It would be empirically unpredictable to try and identify cause and effect within this complex web of relations. However in my attempts to cultivate ‘inquiry as stance’ I am heartened that the data suggest that students appear to be learning more about themselves and the nature of education. If this is the case then I would like to suggest that the integration of single- double- and triple-loop learning is

also about 'learning how to learn' where agency is found not so much in my teaching but in whatever spheres of influence students choose to engage themselves and the stances they adopt in doing so.

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