CRITICAL AND REFLECTIVE THINKING

The ability to reflect critically on sustainability challenges

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Introduction

'Critical & reflective thinking' is acknowledged as one of the key skills within Education for Sustainable Development in Higher Education Institutions (Dawe et al, 2005). In this chapter we outline why the skill is important for all professionals who will contend with sustainability and provide two examples from our experience of teaching sustainability of how this skill can be developed through participatory learning experiences.

Professional people are tasked with the design and implementation of strategies to address systemic societal problems in a variety of contexts. It is increasingly acknowledged that such challenges cannot be addressed using 'one-size-fits-all' blueprints. The complexity of ecological, social and economic systems means that such approaches often struggle to achieve their stated ambitions because they are based on an incomplete understanding of the systems involved and can fail to fully engage the people whose cooperation is vital for success.

An influential argument within Education for Sustainable Development (for example, Sterling, 2001; 2003) is that the understanding that informs sustainability strategy is shaped, often unwittingly, by the dominance of accepted 'versions' of what's important. This includes dominant values, ways of understanding of how systems work and how to influence change. It is therefore necessary for professionals to critically reflect on the influence of their own and others' 'versions' before innovation and change can occur.

The focus on participatory processes in the study of sustainability is arguably a response to this need. Involving interested others in the process allows the professional's own 'versions' to be challenged. It also gives scope for challenging the 'versions' of participants. This is particularly important if their cooperation is required for strategic success as any proposed solutions must be meaningful to them.

Cultivating Reflective Practice

Reflective practice in the learning arena can be traced back to Socratic questioning, where one question is answered by another question so as to challenge the subject under discussion. Dewey called reflection 'a kind of thinking that consists in turning a subject over in the mind and giving it serious thought' (1933). In more recent contributions to educational theory reflective practice has been associated with Kolb's experiential learning cycle (1984), with Schon (1987) as an important component for the development of professional knowledge and practice and with Mezirow (1990) as a trigger to the process of transformative learning in adulthood. Reflective practice has also become part of the movement for 'active learning' (Baldwin and Williams, 1988) or 'whole person learning' (Taylor, 2007) both of which place

value on self-determination and autonomy for the learner. These approaches to learning have in common a recognition that individuals need to learn to foster their ability to reach a state whereby they can autonomously examine their own practice in relation to their circumstances. By autonomously we mean that the learner can take personal responsibility for establishing a reflective practice of their own, the actual practice itself may or may not include others.

So how, as educators of sustainability literacy, can we take reflection into the world of practice and experience for our learners? Schon, writing about his experiences in teaching learners about architectural design observed:

However much students may learn about designing from lectures or readings, there is a substantial component of design competence – indeed, the heart of it – that they cannot learn in this way. A designlike practice is learnable but not teachable by classroom methods. And when students are helped to learn to design, the interventions most useful to them are more like coaching than teaching – as in a reflective practicum. (1987: 157)

We could substitute the word 'design' with 'sustainability' here. A learner who knows about sustainability is likely to be limited in their abilities to make change unless this knowledge means something to them in practice, in effect the necessary transformative component of sustainability will remain dormant without reflective practice. Sustainability is a lived experience, not a dry intellectual exercise. If it does not touch or enter the heart of the person learning about sustainability they may have been taught much but have learnt little.

In the following two examples, we aim to show that critical reflective thinking is a *method for learning about* sustainability (i.e. a technique used in the education setting to explore an issue) as well as being a necessary *skill for practising professionals*. Our aim for learners is that they acquire not simply the ability to replicate techniques taught, but the ability to craft responses appropriate to the variety of circumstances in which they will find themselves.

Example 1: Role-Playing Stakeholder Participation in Decision Making

During a first year undergraduate module, learners are exposed to the complexity of group environmental decision making using a role play exercise set in a national park in the UK. The learners research the roles of individual stakeholders and represent their stakeholder during a decision making exercise. At each stage in the process they are asked to complete a reflective diary. The learners are given questions to answer at each step of the decision making exercise in order to assist their reflective practice.

The purpose of these reflective diaries is to capture the thoughts and feelings that each learner is experiencing during the environmental decision making exercise. As they record their moments of reflection learners begin to sense and express the complexity associated with group environmental decision making. Learners come to a realisation that sustainability has many meanings and interpretations (or 'versions'), which can be affected by a person's values and the context in which sustainability is being applied. Without the opportunity for critical and reflective thinking this important personal insight may have been missed; in so doing the learner may have also lost out on a moment to deepen their own personal understanding of sustainability.

What we, as educators, have learnt is that many of our learners need some structure and guidance in the art of reflection. Recognising and recording one's own inner-commentary, emotions and values, alongside the dialogue and exchanges with others does not come easily to all. Based on our experience and influenced by the work of Moon (1999) on stages of learning, we suggested there are at least three levels to the reflective process:

1. The recording of events and facts – At this basic level each learner is seeking to notice what is literally occurring to them and around them.
2. The recording of dialogue or subtext, non verbal cues and emotional responses – At this intermediate level each learner is seeking to become aware of what is occurring more subtly around them and within them.
3. The recording of transformation – At this more advanced level each learner is seeking to account for any behavioural or attitudinal changes in themselves or others.

We have found that most learners find the first level relatively straightforward and that some learners are able to move to the second level and critically examine and observe what they and others have said and done as a process of making sense and drawing meaning out of what is happening around them. The most challenging and searching level of critical thinking and reflective practice is at the third level, this is where a mentor or facilitator to guide the learner is especially helpful.

A memorable and revealing moment in this module, was when we were asked by a learner for a definitive 'version' of a problem, after he was shown a series of conflicting stakeholder 'versions' by his colleagues. Various other learners joined in the questioning, effectively looking to us as educators for reassurance and to answer the question 'what is the truth here?'. We turned around the question to the group, emphasising the different perceptions of 'truth' of the different stakeholders involved, and the resulting inherent value conflicts in connection with the problem. In effect these learners were struggling to make sense out of what was happening around them. We have also experienced situations where a learner (in their own opinion) feels unmoved or unchanged by the learning experience. It is the role of the educator to judge whether the learner would benefit from questioning to help reveal any hidden transformation or to allow the passage of time to reveal any deeper experiences to the learner, whilst being mindful that there will be times when a learner may not have experienced a transformational event.

Example 2: Exposing Dominant and Competing Narratives

The use of intensive coaching methods is not always possible. It can be challenging to learn the skills of critical thinking and reflective practice in the setting of a traditional lecture theatre, especially with large groups of learners. However, at the postgraduate level, in an introduction to sustainability module, we have found the exposition of dominant and competing narratives to be an effective method for stimulating critical and reflective thinking. In this interactive approach lectures are deliberately structured in three parts.

In the first part the lecture topic is framed from the perspective of society's dominant narrative (or 'version'), which tends to conform well to our taken-for-granted assumptions about the way the world works, the nature of problems, their causes, who is responsible, and how they need to be solved. At this stage causal theories and supporting evidence are

presented as unproblematic. In presenting these ideas the learners are asked to participate in thinking through the arguments and evidence as the lecture narrative unfolds. One example is a lecture on land use that introduces the concepts of public and private goods, and presents evidence supporting the dominant narrative that increased privatisation and improved property rights leads to improved environmental quality. The learners are asked if they agree with the conclusions reached and whether they see any problems in making these claims. While some learners may question some of the technical details of the argument, they rarely challenge the overriding premise and conclusions that follow.

In the second part, the topic is unexpectedly reframed by presenting another body of evidence that operates outside of the problem frame just given, usually by exploring the same problem in a totally different context. It is important that the new evidence does not just challenge the technical analyses of the problem, but calls into question the appropriateness of the taken-for-granted assumptions underlying the dominant narrative. In the example of the lecture on land use, after the learners have agreed to the validity of the *universal* nature of the conclusions reached, a case study of East African pastoralists is presented in which the introduction of private property actually resulted in increased environmental degradation and famine. Through these cognitive experiences of reaching firm conclusions then being confronted with an alternative narrative frame leading to a critical awareness of the limits of those conclusions, learners begin to reflect not only on the substance of the issues, but also on their habit of uncritically framing problems and responses.

In the third part of the lecture, the importance of understanding the context-dependent nature of problems and responses is discussed. It is not that the second narrative frame is 'correct' and the first narrative frame is 'wrong', rather, the emphasis is on debunking the myth that sustainability and sustainability solutions are one-size-fits-all. Thus we emphasise the importance of reflective practice, questioning taken-for-granted assumptions, and crafting context-specific responses. To facilitate this, the historical specificity of the philosophical and theoretical origins of many of the now-taken-for-granted assumptions underlying our worldviews are discussed (e.g. Locke's ideas on private property situated in the biographical and historical movements of his time).

Through our experience with this approach, we have learnt that challenging basic deeply held assumptions of learners can be a disorienting experience for them. Midway through the module some learners have reported feeling frustrated and depressed by the lack of clear answers on issues they feel deeply about. However, by the end of the programme most learners reflect on the experience as being positive, and many as being transformative. Learners consistently report that this approach challenged their thinking and assumptions, enabled them to develop their own viewpoints, and fundamentally altered their perspectives.

Concluding Remarks

The above examples demonstrate the relevance and need for learners to develop critical thinking and reflective practice as a means of questioning dominant versions of sustainability and developing context specific solutions. In addition we have argued that 'real' reflective practice benefits from the presence of another person, such as a mentor, facilitator or professional who ask questions so as to prevent learners from getting into self-justifying traps or being drawn into negative loops of dejection. Learning how to reflect on practice is the first

step in developing critical and reflective thinking, and benefits from the guidance of an educator.

These educative approaches tread a fine line between being an empowering experience and a debilitating one. To achieve the former and avoid the latter, it is important that learners are provided with a new footing after learning what they thought was certain about the world is actually far from certain. This new footing should not be a new set of one-size-fits-all answers, but the skills for critical and reflective practice that will empower the learners to craft their own context-specific responses to sustainability challenges.

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