Critical Thinking through Problem-based Learning in an Applied Ethics Module

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Keywords: *critical thinking, problem-based learning, applied ethics.*

Introduction

In this paper I discuss efforts I am making to engender critical thinking in an applied ethics module. Employers and governments have long called for graduates with generic, interpersonal, communication, and critical thinking skills [1]. Alongside this, critical thinking has long been associated with more traditional academic goals, and the preparation of the individual for democratic citizenship [2]. The design of the module has been informed by these considerations and the common belief that a problem-based learning approach to teaching and learning is a good way to promote critical thinking. I describe the module and its rationale, and consider some practical issues that will inform the next stage in the module's development.

The Module

The Applied Ethics module ran for the first time in 2006 and forms part of the university's new *elective studies* programme. Students who take Applied Ethics at intermediate level and Professional Ethics at honours level qualify for a "mention in ethics" on their transcripts. Before discussing the module's rationale it will be helpful to point out the more interesting aspects of its structure.

There are two phases:
Phase 1 (Weeks 1-6): In phase one there are no lectures. Students are given case study material and questions to discuss in small groups. The case study material is chosen to stimulate discussion that draws into play the students' personal values, beliefs and commitments. During weeks two to five the lecturer begins to facilitate debate across the groups. The role of the lecturer here is to guide discussion in profitable directions and not to act as an authority. One way to do this is to use a transparency to record students' comments and to work with them to identify themes and points of conflict among the groups [3]. In week six, assessed group presentations are used, in part, as a means to identify gaps in understanding and knowledge.

Phase 2 (Weeks 7-11): The second phase is devoted to preparation for the assessed group essay, and during this time there is more formal lecture input. What is delivered by the lecturer is determined, largely, by the gaps that have come to light in the presentations, by issues arising from the class discussions, the information the students have asked for, and the topics on which they are focussing [4]. Week 13 is the deadline for the assessed group essay. The *Delphi technique* will be used for the essay the next time the module runs (more on this below) [5].

Rationale for the Module's Design

Critical Thinking

Many who write on critical thinking emphasise its cognitive and metacognitive aspects (Kuhn, 1999, 17) [6]. John McPeck (1990), for example, characterises a capacity for critical thinking as a person's ability to evaluate arguments *and* to appreciate and to explore the bases of his or her evaluative commitments. And a similar emphasis is found in the many instructional texts (eg. Thomson, 2003) and extra-disciplinary classes in critical thinking that centre their teaching around exercises in formal and informal logic.

Alternative accounts emphasise the dispositional and attitudinal aspects of critical thinking. Bailin et al. (1999a, p. 281, 1999b, p. 294), Perkins et al. (1993), McDowell (1996, esp. Lecture 4), and Nussbaum (1990, see, for example, p. 43), are examples. McDowell, for example, views criticality as a developed, circumspect attitude to learnt, or inculcated beliefs.   Attitudinal approaches do not, however, propose that we jettison the reasoning and evaluative aspects of critical thinking, and most accounts are at least compatible with a more comprehensive position that accommodates both cognitive and attitudinal aspects.

A comprehensive view is offered by Peter Facione, for example. He recognises the cognitive aspect of critical thinking, being thinking that involves "self-regulatory judgement which results in interpretation, analysis, evaluation, and inference…" (Facione, 1990, p. 2). But he also notes that the "ideal critical thinker" must also be "habitually inquisitive… trustful of reason, open-minded, flexible, fair minded in evaluation, honest in facing personal biases… (and) willing to reconsider" (*ibid*.). Harvey Siegel, similarly, contrasts the "ability to properly assess reasons" (Siegel, 1990, p. 79) with "the willingness, desire, and disposition to base one's actions and beliefs on reasons" (ibid.) – what he calls the *critical attitude* or *critical spirit*. Barnett (1997, esp. Ch. 5) believes that the aim in teaching critical thinking should be to shape the practical character of the student. We ought, he thinks, to recognise that acquiring a critical stance can alter a person's personal ethical and political outlook, and our teaching should reflect this - we begin and end with the person and not merely her logical capacities (cf. Lave & Wenger, 2002, Ch. 2, on *situated learning*) [7].

The pedagogical implications of the comprehensive conception of critical thinking are stated well in Peter Facione's (1990, p. 23) conclusion that

> (m)odelling (the) critical spirit, awakening and nurturing those attitudes in students, exciting those inclinations and attempting to determine objectively if they have become genuinely integrated with the high quality execution of (critical thinking) skills are...important instructional goals (cf. ibid., p. 27, Recommendation 7).

On this, largely uncontroversial, view, then, teachers who wish to engender critical thinking should target dispositions and attitudes as well as rational and cognitive capacities.

Critical Thinking and Problem-Based Learning

There is a natural connection between problem-based learning and critical thinking. A distinguishing feature of a *problem-based* learning approach to teaching and learning is the role that the problem plays in the learning process (Maudsley and Strivens, 2000, 541). A more traditional, *problem-solving* approach requires students to solve problems, but the problems are introduced after associated information has been presented. The problem in this latter approach is typically designed to exemplify a concept, address an already well-defined issue, or to offer an opportunity to apply a piece of technical knowledge. My own teaching in Economics has usually taken this form. By contrast, in problem-based learning no, or only limited information is given prior to the problem being issued. Typically the problem will be unstructured and will have multiple "solutions" depending on the interpretation and emphasis students give to it (Savin-Baden, 2003, Hmelo-Silver, 2004). This has the following intended effects:

- Deeper knowledge of a discipline - the path taken to a solution will draw on a various aspects of a discipline, revealing interconnections and, in some cases, the underlying logic of the discipline. In addition interdisciplinarity is also often encouraged.

- Reflective learning – students will repeatedly face situations where the next step to take will be a matter of reflexively grasping the problem at hand and its possible solutions [8].

It seems natural to claim then that problem-based learning promotes the cognitive skills associated with critical thinking. A view of the connection between critical thinking and problem-based learning that emphasises the transformational power of small-group discussion can be found in Abercombie (1989), Benhabib (1992), Cartney and Rouse (2006), Hicks and Lemore (1999), and Kosnoski (2005). What these authors stress is the way in which group discussion can *force* a person to recognise, for example, the need to support her views with reasons. In order for this to work, however, discussions must be well-managed. The dogmatic person, while a valuable resource in this context, must somehow be tamed.

Practical Issues and Future Development

Three points stand out from my experience of teaching this module:

1) Student feedback was mixed. While some found the discussions fun and motivating others wanted more structure. The comments no doubt reflect differences in learning style and personality that call for attention next time the module runs. Ensuring none are shouldered out of discussions, for example, while retaining the groups' autonomy is quite a challenge. One of the more striking of the students' comments observed that some students came to class with the objective of winning arguments for the sake of winning. This sort of aggressive attitude is to be welcomed, I think – it generates heat - but is only beneficial if groups are carefully managed. Module design must then be informed by the need to achieve a balance between the energy that vocal students provide and the need to help groups to control them.

2) The group essay promotes discussion. However, a clear area of concern is the lack of transparency in the distribution of student effort and ability. To overcome this the *Delphi* technique will be adopted next time. Basically, this involves a series of rounds during which responses are collected from individual members of a group, then analysed and fed back to them as the springboard for subsequent rounds, during which everyone has a chance to revise their views in light of that feedback (see note [5]). Students will also be required to document the conversation that takes place between them and include this as an appendix to the essay (cf. Savin-Baden, 2003, 68).

3) The case study material is intended to be provocative. It might be the case that literature or narrative versions of applied issues would provoke more vivid responses. There are a number of authors who would suggest this to be so, and it is something I intend to experiment with.

Conclusion

There is a natural connection between problem-based learning and critical thinking. Perhaps the strongest connection is in the way that small-group discussion of problems encapsulated in particular case studies can force participants to provide reasons for their opinions and to regulate their contributions. For this to work, however, discussions must be carefully managed. The method of management must not, however, remove group autonomy. Getting the balance right is a challenging task.

Notes

1) For recent statements see Hogarth et al. (2007, §3); Leitch (2006, §1.26); Phillips & Bond (2004, p. 277); Lloyd and Paine (2003).
2) On the traditional connection: Dewey (1968/1916, esp. Ch 4). On citizenship: Hicks & Langsdorf (1999), Barnett (1997), and Dewey (2004/1910, 26).

3) Savin-Baden (2003, Ch. 3) has a good discussion of "facilitation".

4) This is "just-in-time teaching" to the extent that the lecture material is determined, largely, by what the assessed presentations and class discussions indicate the students need most help with. The just-in-time teaching organisation homepage is at http://134.68.135.1/jitt

5) Information on the Delphi technique is available at http://www.britishcouncil.org/learning-innovation-awards-delphi

6) For reviews see Mason (2007) and Pithers & Soden (2000).

7) The cognitive//attitudinal distinction doesn't work as a way to categorise all authors' contributions. Walters (1990), for example, criticizes the cognitive approach to critical thinking for its "vulcanizing" effect. What it misses, says Walters, is that the sources of creative thinking are non-logical imagination and intuition. This criticism needn't be seen as invoking dispositions.

8) Luntley (2007) calls this *learning by reasoning* and argues that most forms of learning have this feature.

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