Knowledge, disciplinarity and the teaching of critical thinking

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Introduction

The idea of critical thinking has become a central notion in the way that higher education is conceptualised currently in society. Its importance is manifested in many ways. It is a term, for example, that is often found in the types of assignments that are set for students on their courses: Write a ‘critical’ analysis of X; or Be sure to adopt a ‘critical’ approach to Y. On a broader level, the term is enshrined in the types of generic attributes and skills that universities claim they impart to students across their teaching programmes (Barrie, 2006). The reach of this idea is also seen beyond the academy, with ‘critical capacities’ often included on lists of skills that employers nowadays typically expect of graduates (Hager & Holland, 2006).

But despite its evident importance, critical thinking remains a contested notion. There is much debate, for example, about what the term means exactly, and also questions about which particular attributes and abilities go to make up the category. Related to this, is the question of whether we should think of critical thinking as a single unified notion; that is, as having identifiable general characteristics, or whether it in fact, refers to a variety of disparate abilities and practices, ones associated with specific fields of activity. While on the face of it these may seem esoteric concerns, they do have important educational implications. This is because the way critical thinking is understood – for example, as a generic skill, or as discipline-based discourse – has a bearing on what educational policies and practices are ultimately pursued in this area. Of particular interest is the question of whether it makes sense to teach critical thinking to students as a subject in its own right.

In this chapter I provide a summary of these debates. The summary looks at the work of several key writers on the generalisability issue, and also considers some of the broader philosophical controversies surrounding these issues. I shall declare from the start however, that my position in such debates is a partial one. In my studies over the last decade into the nature of critical thinking and its place in higher education, I have found myself more and more inclined to the ‘non-generalist’ position (Moore 2004, 2011a, 2011b, 2014). Thus, the conclusion I am increasingly drawn to is that the thinking expected of students in their studies often varies in significant ways from one subject to the next. For this reason, we need to be wary, I believe, about introducing educational programmes that seek to teach such abilities separately from the knowledge fields to which they are to be applied. The chapter provides some empirical evidence for this position.
Critical thinking debates

In educational debates, the issue of generalisability can be traced back at least to Dewey. Norris (1992), in a volume that explicitly addresses the issue of the generalisability of critical thinking, notes Dewey’s view that “the various ways in which men do think can be told, and can be described in their general features” (Dewey, 1933, p. 4, emphases added). Another early advocate for the teaching of critical thinking, Black (1946), however lays out a rival “specifist” position asserting that “the critic’s judgement of the value of a piece of music (or an omelet or a piece of reasoning) is grounded in knowledge of principles and standards appropriate to the subject matter” (p. 7). Norris also notes that within a single pedagogical position, ambivalence can often be expressed about the issue. Thus, in the famous Harvard Committee Report (1945) – a process that established a blueprint for postwar education in the USA – there is mention of how effective thinking necessarily comprises “certain broad mental skills” (Harvard Committee, 1945, p. 66). Elsewhere however, the committee claims – rather reductively one would say – that “the three phases of effective thinking, logical, relational and imaginative, correspond roughly to three divisions of learning, the natural sciences, the social studies and the humanities respectively” (1945, p. 67).

These discussions in educational circles about the generalisability of “the ways that men think” recapitulate a more basic debate conducted around the same time within European analytical philosophy. The quest for a general heuristics of thinking recalls the Vienna School’s objective to find a clear and universal method for evaluating the truthfulness of propositions. The members of this group – Moritz Schlick, Rudolph Carnap and others – would ultimately admit only two types of proposition as capable of being verified and therefore as meaningful – those which are analytically true (or true by definition, like “All bachelors are unmarried men”), and those which are empirically true (like “Water boils at 100 degrees Celsius”). All other statements – including ethical propositions like “murder is wrong”, or aesthetic judgments like “Picasso is a great artist” – were dismissed by the Circle as statements of personal preference and were considered quite literally meaningless (Edmonds & Eidinow, 2001). The “logical positivist” position was encapsulated in the well-known maxim: “The meaning of a statement is the method by which it is verified” (cited in Gardner, 1985, p. 63). This idea finds echo subsequently in many of the generic accounts of critical thinking, including, for example, Robert Ennis’ (1962) famous early definition – as “the correct assessing of statements”.

Logical positivism drew much of its inspiration from the early work of Wittgenstein – in particular the *Tractatus Logico-Philosophicus* whose famous opening words – “The world is all that is the case” – suggest a strong affinity with the logical positivist view (Wittgenstein, 1961). But the later Wittgenstein of the *Philosophical Investigations* was dismissive of the possibilities of any universal method for getting at the truthfulness of statements. Instead, for Wittgenstein II – as his later position has been described – a statement cannot be analysed semantically on its own terms, but can only be understood in relation to the ‘language game’ (or discourse) of which it is a part (Wittgenstein, 1958). The implications of Wittgenstein’s relativism for the field of epistemology were explored subsequently by one his students, Stephen Toulmin, in his work on the nature of argument. Toulmin (1958) concluded that an argument, like a proposition, assumes different forms in different contexts of knowledge, and that what counts as a valid argument in one field may not necessarily be seen as such in others:

What has to be recognised first is that validity is an intra-field, not an interfield notion. Arguments within any field can be judged by standards appropriate within that field and some will fall short; but it must be expected that the standards will be field-dependent, and
that the merits to be demanded of an argument in one field will be found to be absent (in the nature of things) from entirely meritorious arguments in another.

(Toulmin, 1958, p. 32)

In contemporary discussions about the generalisability of critical thinking skills, we can see a lineage with these earlier mid-century debates. Arguably the modern version has two different, but related strands to it – the issue of epistemological generalisability (how general are these skills?) and another psychological dimension (how readily can these learned skills be transferred across domains?). The position one adopts in relation to these issues has important implications for the question of how critical thinking is best taught, particularly whether it should be treated as a separate subject in its own right. Thus, as Norris (1992) explains:

whether or not critical thinking should be taught as a separate school subject depends upon whether there are aspects of critical thinking that apply to all or most subjects, and upon whether separate instruction in critical thinking proves useful for subjects in areas in which they did not receive instruction.

(p. 2)

It is fair to say that in educational debates in recent years – especially in the USA – the generalist position has very much held sway. Much of the original impetus for this approach came from a succession of tests and reports in the USA in the 1980s and 1990s that suggested serious declines in the literacy and thinking abilities of American high school students. The names of some of these reports indicate well the very pessimistic conclusions contained within them – A Nation at Risk (National Commission on Excellence in Education, 1983); An Imperiled Generation: Saving Urban Schools (1988). In the findings of one particularly influential study, National Assessment of Educational Progress (NAEP, 1981), it was suggested, for example, that only about half of school leavers could write a satisfactory piece of explanatory prose and only about 15 per cent could defend a point of view effectively with argument (cited in Nickerson, 1994).

The generalist approach was borne out of this sense of crisis, and as some have suggested (Capossela, 1993), has found its continuing rationale by holding to a generally gloomy view of the education system and the abilities of students. Deanna Kuhn (1991), for example, a strong generalist advocate in the USA, has spoken of the widespread agreement “that education is failing in its most central mission – to teach students to think” (p. 5). And Tim van Gelder, an Australian “critical thinking expert”, has commented on the poor reasoning skills of Australian higher education students, noting in his own informal study that “almost none” of his 95 students could adequately perform a simple task of analysing and evaluating the main argument of a book chapter (van Gelder, 2001).

For advocates of the generalist position the only way to arrest this decline is to have dedicated programmes designed to develop students’ thinking abilities. As Nickerson (1994) suggests: “Improving the quality of [students’ thinking] appears to require, at least, an effort aimed explicitly at that objective” (p. 416). One outcome of this situation has been the proliferation of thinking skills courses across all levels of the education system. At the tertiary level, dedicated programmes have been especially common in the USA (Robinson, 2011). The California State University system, for example, since the 1980s has specified the study of critical thinking as a requirement for graduation. Facione’s (1990) report for the American Philosophical Association urges universities to make general critical thinking courses available to all students, though stressing that all such courses need to be as broadly relevant as possible:
no academic unit should be restricted in principle from participating in an institution's CT program, provided that the overall institutional program in CT equips students in applying CT to a broad range of educational, personal, and civic subject, issues, and problems.

(Facione, 1990, p. 16)

Arguably the most influential proponent of the generic approach has been long-term advocate, Robert Ennis (1962, 1987, 1992, 2011). Because it is general, Ennis argues, critical thinking can be taught as an independent area of study in itself, quite separate from any specific discipline-based content. A key element of Ennis’ theorising has been to compile a systematic list of discrete skills which not only describes, he says, what an accomplished critical thinker does, but also suggests what it is exactly a novice thinker needs to be taught. These skills – which include “grasping the meaning of statements; judging ambiguities, assumptions or contradictions in reasoning; identifying necessary conclusions” (p. 12) – are proposed then as the basis for “stand-alone” generic thinking skills courses. Importantly, Ennis believes that such skills, once acquired, are readily transferable to a multiplicity of domains.

At Australian universities, generalist thinking skills courses have been slow to take off – although recently there have been signs of a growing interest. One programme that has received a good deal of publicity is the Reasonable! project at the University of Melbourne, which provides “quality practice” in the form of a software program bringing about, as the author claims, “substantial gains” in students’ thinking skills (van Gelder, 2001).

The busy activity of generalists in the critical thinking movement – or “industry” as Ronald Barnett (2000) has dubbed it – has come under the critical scrutiny of a variety of different scholars, who take a specifist position in relation to these issues (Glaser, 1984; McPeck, 1990; Atkinson, 1997; Moore, 2004; Jones, 2007). A focus of their various critiques has been on the nature of the educational programmes prescribed, and in particular the epistemic content of such courses. Because generalist programmes are focused chiefly on the development of skills (i.e. the putative skills of critical thinking of the type outlined in Ennis’ taxonomy), the content on which these skills are hung in such programmes tends to be largely incidental. A number of studies suggest however, that it is misplaced to think that content plays only some peripheral role in such processes. In an influential article by Glaser (1984), “Education and thinking: The role of knowledge”, which reviewed psychological work in the area of schema theory, the conclusion drawn is that familiarity and active engagement with content appears crucial in the application and development of students’ critical thinking and problem-solving abilities. As Glaser explains:

Much [research] emphasizes a new dimension of difference between individuals who display more or less ability in thinking and problem solving. This dimension is the possession and utilization of an organized body of conceptual and procedural knowledge, and a major component of thinking is seen to be the possession of accessible and useable knowledge.

(1984, p. 97)

Siegler and Richards (1982) have come to similar conclusions, pointing out that “knowledge of specific content domains [seems to be] a crucial dimension of development in its own right” (p. 93). They suggest further that “changes in such knowledge may underlie other changes previously attributed to the growth of capabilities and strategies” (p. 93).

Arguably the thinker who has most challenged the generalist position is John McPeck (Robinson, 2011). In debates about the nature of critical thinking, McPeck (1981, 1990, 1992) has proposed a rival non-generalist definition, namely critical thinking as “the appropriate use of reflective scepticism within the problem area under consideration” (1981, p. 7, original emphasis).
In his insistence on this contextual element—"the problem area under consideration"—we can see in the McPeck position a rejection of the idea that any principles of critical thinking can be applied in some automatic, heuristic way. Thus for McPeck, the content at which the thinking activity is directed is crucial. It is nonsense, he suggests, for someone to claim that "they teach thinking simpliciter". This is because thinking, by definition, is "always thinking about something, and that something can never be 'everything in general' but must always be something in particular" (1981, p. 4).

On the issue of generalisability, McPeck is a clear relativist. In his work he acknowledges Stephen Toulmin as an influence, and in the following passage draws in a deliberate way on the terminology of Wittgenstein:

Just as the rules of a particular game do not necessarily apply to other games, so certain principles of reason may apply within certain spheres of human experience, but not in others. A principle in business or law may be fallacious in science or ethics.  
*(McPeck, 1981, p. 72)*

Whilst acknowledging that there are some limited general thinking skills, McPeck (1992) insists that "they offer little to get excited about" (p. 202). This is because, he suggests, the more general the skill, the more trivially obvious it seems to be—like "not contradicting one's self, or not believing everything one hears" (p. 202). For McPeck, the truly useful thinking skills tend to be limited to specific domains or narrower areas of application. The implications for teaching of the McPeck position are that the development of students' critical abilities should always be pursued within the context of their study within the disciplines.

**Examples of the domain-specificity of critical thinking**

As explained in my introduction, and perhaps implied in the preceding discussion, my take on these matters is not a non-partisan one. As indicated, I find myself strongly inclined to the "specifist" position. This position was formed largely on the basis of an extensive study I undertook in the mid-2000s into the way critical thinking was conceptualised across a range of different fields (Moore, 2011a). The research chiefly involved interviewing academics from different discipline areas in the Arts Faculty of a major Australian university about the type of thinking (and writing) they typically expected of students. An additional part of the research involved collecting and analysing the various assessment tasks set by these academics for their students.

For the remainder of this chapter, I wish to present some samples of the assignment tasks collected for the research (see also Moore, 2014 for a more detailed discussion). The samples, shown below, come from three discipline areas (Philosophy, History, Cultural Studies), and are notable for being the first exercise tasks set for students in introductory first years subjects in each of these areas. Such tasks typically play a significant role in Australian undergraduate education—they are usually low-weighted assessments, and have the important function of developing key academic skills thought to be necessary for effective engagement in the particular discipline area. The following is introductory information provided to students about the purposes of these exercises from two of the different disciplines.

The exercises set in Philosophy will help you in coming to terms with the requirements of study and thinking in Philosophy.  
*(_Philosophy Department Handbook, University X_)*
In units in History, you will be given written exercise tasks to complete. These tasks are
designed to help you work on specific skills in the critical evaluation of different kinds of
evidence, and writing evidenced arguments.

(History Department Handbook, University X)

The “exercise task” thus constitutes an interesting source of data, one that affords insights into the
way disciplinary academics envisage the distinctive modes of thinking that underlie their particular
field, and which novitiate students need to acquire in order to participate meaningfully in it.

The first point to note about each of the sample tasks below is that, in each, these requisite
abilities are related to being “critical” in some way; that is, students are variously instructed to
provide a “critical evaluation”, or “critical analysis” and so on (see bold). My interest in the dis-
cussion below is to consider what being “critical” might involve in each of these cases, and to see
what light this might shed on the type of thinking required of students in these different contexts.

The first task is from a first year Philosophy unit (Figure 20.1). It will be noted that students here
are required to select one of the five arguments (or “proofs”) for the existence of God advanced by
Thomas Aquinas (his famous Five Ways), and then to provide what’s termed a “critical evaluation”
of the text that has been chosen. A fair amount of detail is provided about how this critical evalua-
tion should proceed: students are told they need to think about the text as an “argument” and then
to decide how “successful” this argument is. This judgement is to be made on the basis of standard
analytical procedures typically used in Philosophy. Thus, it is explained that if students are inclined to
see the argument as an “unsuccessful” one, they should support this position on the basis of identify-
ing either: (i) a problem in the premises of the argument, or (ii) a problem in the relationship between
the argument’s premises and its conclusion; that is, its logical structure (ll. 7–8). If, on the other hand,
students see the argument as a “successful” one, they are advised to establish this “success” by coun-
tering at least one possible “objection” that might be mounted against it (ll. 9–10).

Turning to the second task (Figure 20.2), from a History unit, students here are asked to pre-
pare what’s termed a “critical analysis”. This task, as can be seen, requires students also to select
a text – this time a “primary source document” relating to the politics and history of the early
twentieth century (various tracts written by Woodrow Wilson, Lenin, etc.). As in the previous
Philosophy task, students are also required to give some account of the author’s “argument” (l.
7). However, rather than explicitly evaluate this argument (i.e. assess its “success” or otherwise),
the task here is for students to locate the document within its place and time (its historical con-
text), and drawing upon this, offer some interpretation for why the author might be advancing
the views expressed in it – their “motivation” (l. 8).

The third task is from a Cultural Studies unit (Figure 20.3). Like the two previous tasks, this
task also requires students to select a text – although the term “text” is used here more broadly

Exercise: Argument analysis

Consider Aquinas’ five arguments (or proofs) for the existence of God – his famous Five Ways.
Select one of these arguments and provide (a) an analysis of the argument contained in the
passage (b) a critical evaluation of the argument.

That is for (a) identify the premises and the conclusion of the argument for (b), say whether
or not you think the argument is successful, then explain why by pointing out a flaw in one
or more of the premises or in the structure of the argument. If you think the argument is
successful, then consider an objection that someone might make to it and provide a reply to
that objection.

Analysing Arguments PHL 1030

Figure 20.1 Philosophy task
Critical analysis

You are required to critically analyse one primary source document from Weeks 2 to 5 in your handbook (i.e. Condorcet, Wilson, Lenin, Himmler, Moseley, etc.).

In the critical analysis you should aim to:

5. place your document in its historical context (who wrote it and when, and how does it reflect those times?)
6. outline the author’s argument (what are the author’s main points?)
7. suggest the author’s motivation for writing the document (why was he/she writing?)

Contemporary Worlds HSY 1030

Figure 20.2  History task

textual analysis:

Write a short explanation of your understanding of any four of the following key concepts:

5. intertextuality
6. paradigm and syntagm
7. denotation and connotation
8. sign and signification
9. narrative
10. the spectacle
11. transgression
12. commodity culture

Select any two of the cultural texts* we have considered on the course so far this semester and provide a critical analysis of each. In each analysis, you should draw on one (or several) of the categories above that you find relevant to the material you are considering.

Introduction to Cultural Studies CLS 1040

*Texts include: Frankenstein (novel, film); Heart of Darkness, Apocalypse Now; Alien Trilogy, Cyberpunk magazines.

Figure 20.3  Cultural Studies task

To refer also to non-literary texts, such as films and television programmes (the Alien Trilogy, Apocalypse Now, etc.). In the task, students are asked to write a “critical analysis” of the cultural text they have selected. The critical element in the task here would seem to revolve around the student needing to draw on a specific theoretical “concept(s)” – for example, “intertextuality”, “syntagm and paradigm” and so on (ll. 3–10) as the basis for developing their “analysis” of the text.

The three tasks are similar in the way that each requires students to engage in some way with a text: Aquinas’ writings in the first task; a primary source document in the second task; and a “cultural” text in the third. Also in common, as we have seen, is the requirement that students somehow adopt a “critical” approach to the text they are considering. But while the tasks are similar in these general respects, each would seem to require a distinctly different approach to their subject matter. I have attempted to characterise these differences in the simple sketches in Figure 20.4.

Thus, in the Philosophy task, the critical mode is one rooted in the idea of judgement, where students need to decide upon the “success” of a text, by evaluating it according to certain given criteria. Significantly the task requires students to engage with the text as an entity unto itself, as the “text on the page”, as the approach is sometimes described (Belsey, 1980). In the History task, students are not so much concerned with the making of a judgement, as with the proffering
of an interpretation – in this case, to consider what might have motivated the author to write
the text in the first place. Further, we see that the text here is not to be understood on its own
terms, but rather in relation to the broader social context in which it was produced. The Cultural
Studies task also requires recourse to material outside the text. Here though, it is not some puta-
tive social reality, but rather other textual entities; that is, the various theoretical concepts that
might provide a particular entrée into the text’s various cultural/literary qualities. Thus, all the
tasks ask students to be critical in some general way, but what it is that students need to direct
their critical thoughts towards (i.e. the types of text to be considered), and the modes of analysis
they need to bring to these texts, are arguably quite different in each case.

A few general points can be drawn from this analysis. One is that it is clear that for a student
to engage effectively with these tasks – to apply the right critical approach – they would need to
have to hand quite specific knowledge related to each of these fields. Thus, in the History task,
for example, to perform a “critical analysis”, the student would need to know about the relevant
historical events and circumstances that surround the particular document chosen for analysis.
Similarly, for the Cultural Studies task, it would be necessary to know about the various concepts
(or categories) that are to form the basis of the analysis (e.g. “intertextuality”, “paradigm and
syntagm”, etc.). It seems fair to assume in each case, that the more knowledge a student is able
to bring to the task (i.e. the historical milieu, or the theoretical categories), the more effective,
and indeed “critical”, their response is likely to be. The structure of these tasks – and the requi-
site knowledge base implicit in them – thus lends support to the conclusion drawn by Glaser
(1984), namely that a major factor in the quality of one’s thinking in the undertaking of an
activity is “the possession of accessible and useable knowledge” (p. 97). And to this we would
add, knowledge that is relevant to quite specific fields of endeavour.

Another point to emerge from the analysis is that each of these tasks, on the face of it,
requires its own distinctive mode of critical thought. This observation serves as an additional
challenge to generic approaches to critical thinking. As was mentioned, the underlying assump-
tion of this approach is that the generic abilities typically taught on critical thinking programmes
will have applicability to “a broad range of educational subjects” (Facione, 1990). It is difficult
however, to see how the typical components of such programmes (e.g. judging ambiguities,
assumptions or contradictions in reasoning, identifying necessary conclusions, etc.) would have
relevance to some of the tasks presented here. Thus, for the Cultural Studies task, one wonders how the skills of judging the logicality of propositions would be helpful for a student seeking to analyse theoretically a particular cultural artefact; or in the History task, how these skills will be of any obvious assistance in understanding the writerly motivations of a particular historical actor. Tellingly, it is only the Philosophy task (where students need to consider the truth value of premises and the validity of arguments in a text) that appears to have any obvious alignment with the types of abilities that form the basis of many standalone critical thinking programmes.

Thus, while it is claimed that general critical thinking programmes are “readily transferable to a multiplicity of domains”, the evidence of the assignment tasks considered here – ones concerned, as we have seen, with inducting students into the particular critical modes of a discipline – suggest we are entitled to be sceptical of such claims. Indeed, an “uncritical” application of these generalist skills to some of these tasks would be likely to lead to the producing of quite anomalous responses. Elsewhere, I have argued that the discourse associated with generalist critical thinking training is best thought of not as a general discourse at all, but rather a quite specific one (Moore, 2004). This discourse, one concerned mainly with the logico-semantic properties of statements and texts, would seem to have much in common with a specific discipline area – namely, analytical philosophy. While such a discourse is certainly a valid one in itself for students to learn, it is misplaced to imagine that its methods can form an adequate epistemological base for study in a range of other distinct disciplines. Indeed those committed to continental philosophical traditions would argue that such methods do not even constitute a universal basis for the study of philosophy per se (Green, 1999).

Conclusions

The conclusions that can be drawn from the analysis above are twofold: one is that the ability to think critically in many contexts seems to be dependent on the thinker being in possession of relevant and sufficient content knowledge in that field; the other is that the methods of critical thinking would seem to vary significantly across different disciplinary contexts. The corollary of these observations is that the teaching of thinking skills – and indeed other general abilities we may wish to develop in our students (written communication, problem solving, etc.) – is best handled not in separate stand-alone programmes, but firmly within the context of students’ study in the disciplines. John McPeck (1990) summarises the situation well:

If I were to put my disagreement with the [general thinking] movement into one bold-relief sentence it is this: in their attempt to develop critical thinking, they have the order of cause and effect reversed. They believe that if you train students in certain logical skills (e.g. the fallacies, etc.) the result will be general improvement in each of the disciplines or qualities of mind. Whereas I contend that if we improve the quality of understanding through the disciplines (which may have little to do with “logic” directly), you will then get a concomitant improvement in the thinking capacity.

(1990, p. 21)

In the twenty odd years since McPeck put this case, it is fair to say that the trends have been very much away from the strong discipline-based teaching McPeck advocates. Indeed, under the influence of such “genericising” movements as graduate attributes, generic skills, employability skills and so on, we have seen, arguably, a weakening of disciplinary education in universities, along with a loss power and esteem of the institutional structures on which it is founded – the academic department. The generic critical thinking movement, which holds that the effective teaching of these matters necessarily involves some “outsourcing” from the disciplines, thus
emerges as an interesting and – in my view – a very problematic manifestation of these shifts. In this time of considerable change in our institutions, it seems most important that we carefully review the consequences of such changes, and what might be lost in university education as a result. The application of a strongly “critical” and also contextual approach to such matters – both a consideration of what is best for the intellectual development of our students, and also for the health and vitality of our institutions – is perhaps the least we can hope for in such debates.

References


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