

7 Steps to: Fostering Critical Thinking

Overview

Critical thinking is seen as fundamental to HE practice. Harvey et al (1997) identified critical thinking as what differentiates graduates and enables them to demonstrate the higher order skills that employers require. Barnett (1997) advocates students need to develop as 'critical beings' who can think effectively throughout their studies and prepare for a changing world through their ability to ponder on issues, grapple with ambiguity, uncertainty and disequilibrium (Meyers, 1986). The concept of critical thinking is however highly contested and opinion amongst theorists is divided about whether critical thinking is universal or cultural and context-specific (Mason, 2008).

Students are expected to think critically yet the manner in which the pedagogy is organised offers little time for its development. Learning to think is tough; to express critical thought can be difficult for students who can feel daunted by the world of academia (Moon, 2005).

Students are expected to demonstrate their thinking in many different ways. These include: formulating and asking questions; gathering and assessing relevant information; using abstract ideas; and analyzing, synthesizing and evaluating. The relationship between students and staff affects students' confidence, in their freedom to think and enthusiasm to voice critical opinions (Kember, 2001). Students need to feel they are in a safe supportive learning environment where without judgement they can experiment, take risks, explore and participate in diverse and creative thinking. To facilitate this staff need to create positive trusting relationships with their student cohorts (Hamza & Griffiths, 2006).

1. Provide progressive programme development

Students should expect their thinking to change during their academic studies. Our programmes should be designed to facilitate the development of critical thinking. Well-designed module learning outcomes should demonstrate the progression of critical thinking across the programme. Students should initially be able to 'identify and explain', progressing to 'analysis, synthesis and evaluation' in their final year. Learning outcomes that promote thinking include words such as discuss, differentiate, model, analyse, interpret, evaluate, argue, justify, appraise and synthesis. Through careful guidance students can be encouraged to dig deep and explore the unknown (Hamza & Griffiths, 2006). Ennis (1997) posed the question, 'should critical thinking be taught separately, embedded into subject specific instruction or both'? Pithers & Soden (2010) suggest that many programmes offer insufficient opportunity for students to develop their thinking. Think about: timetabling sessions where students engage in activities which develop discipline related critical thinking; using Bloom's Taxonomy (1956) to introduce students to critical thinking; using examples of critical thinking from both subject discipline and everyday activities; discussing uncertainty and disagreement between experts.

2. Plan sessions to foster critical thinking

Traditional lectures are often knowledge transfer sessions with limited student engagement (Claxton, 2012). Student centred approaches foster thinking about knowledge through discussion and interaction (Harrison & Cairns, 2008). Meyers (1986) suggests thinking can be fostered through using facilitative methods. It is a good idea to vary session formats and use more active teaching methods. The 'Flipped Classroom' technique can maximise in-class thinking time (Bennett et al, 2011). Here, students prepare for sessions through pre-set work (e.g. presentations, podcast, video clips, reading articles and papers) and the teaching session is used to extend student thinking and learning through discussion and activities. The use of problem or enquiry based-learning and case studies enable students to engage in higher levels of thinking (Barrett & Cashman 2010). Exposing students to issues within the discipline containing uncertainty and disagreement helps them to think about contested knowledge and improves their ability to justify their arguments. Another good idea is to plan sessions where students can mark and assess assignments on the quality of critical thinking.

3. Creating a climate for critical thinking in the classroom

Crucial to a climate of thinking is to model the thinking process in teaching (Meyers, 1986). Plan for deliberate pauses. Use 'stop and think time' or 'wait time' in sessions. Extending pause time to 3-5 seconds results in more student responses and engagement (Tobin, 1987). Use the 'think, pair & share' or the 'snowball' technique (discussions in 2's,4's,8's) to energise a session through reflection, thinking and discussion. Use words in session such as 'ponder on', 'toy with', 'reflect on' and 'critically discuss'. Lecturer style, attitude, enthusiasm, and compassion can encourage student thinking (Hamza & Griffiths, 2006). Consider how your own 'thinking and reflection-in-action' within your taught sessions affects your students' thinking (Schon, 1983). Organise a peer review of a teaching session and specifically ask for feedback on how your session promotes student thinking.

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4. Maximise critical thinking in seminars and tutorials

Tutorials and seminars are for thinking and discussion; they offer students the freedom to voice opinions, be listened to and participate in 'wild thoughts' (Hough, 2009). Use debate, discussion, games, simulation and role play to explore scenarios, issues and conflicts. An effective discussion will have thinking periods whilst students organise their ideas facilitated by quiet tutors who ask questions and wait for answers (Kneale, 2011). Use tutorials and seminars to assist students to recognise and avoid habitual or conventional ways of thinking (Finke et al, 1996). Set questions which are complex and have multiple or challenging solutions. Use activities such as: brainstorming, problem based or solution focused activities, 'Six thinking hats', '5 Whys questioning technique' and role play to develop thinking through experience.

5. Encourage thinking beyond the classroom

Students need to understand the importance and impact of critical thinking on their studies. Encourage students to consider where and when they engage in personal thinking time. Support students to think and learn from extracurricular activities including societies, clubs, volunteering, internships and employment. Promote the value of students' recording their thinking through reflective diaries, learning journals, blogs, or an e-portfolio (e.g. Pebble Pad). Student support and resources to develop critical thinking can be obtained from Learning Development and Learnhigher. <http://www.learnhigher.ac.uk/learning-at-university/critical-thinking-and-reflection/>

6. Engage students in critiquing assessment

Critical thinking can be enhanced through involving students in the design of assessment, marking criteria, self and peer assessment (Boud, 1995). Provide students with previously completed assignments to enable them to reflect and assess the level of thinking (Price et al, 2012). Students need to participate in self and peer assessment, learn to make judgements and thus consider how to improve their future assessments. To stimulate thinking through feedback Laurillard (2002) suggests students and staff need to engage in dialogue about assessment. This dialogue creates a 'feedback loop' (Sadler, 1998) where students can decipher the feedback and improve. Some practical suggestions include setting students the task of marking past coursework and exams then discussing and comparing differences in standards and grades. An assignment cover sheet can promote thinking through self-assessment, self-grading and reflection. Conduct sessions where students can help each other decipher personalised feedback from assessments.

7. Enable students to build on and further develop critical thinking

Evidence suggests that students do not understand the terminology of critical thinking nor how their thinking needs to develop over time (Moon, 2005). Don't assume students know how to develop thinking from stage to stage. At the start of each year make explicit and discuss the required level of thinking. Plan activities that facilitate discussion and consideration of discipline related thinking. Create an environment where objective challenge and discourse is the accepted norm rather than subjective disagreement based on personal opinions. Activities to develop thinking include: asking students to formulate 'stage appropriate' questions; setting abstract ideas and requesting students develop arguments; plan a seminar discussion using 'devil's advocate cards' where individual students are asked to support different and opposing views.

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