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# **Transformative learning development as a basis for maximising the impact of critical thinking as a core element of enabling curricula**

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*Critical thinking (CT) is a core skill for success for undergraduates and, as such, is an essential consideration for enabling education. The learning & teaching of CT often is approached as a purely applied exercise in basic academic skills development involving generalised transferable CT skills such as assessing statements and critiquing arguments. However, it can readily be argued that this approach is too narrow. CT extends beyond transferable skills to a set of behaviours and psychological traits that require students to experience transformative learning in order to become autonomous thinkers. Approaching CT from this perspective leads to learning & teaching strategies aimed at supporting students to become more aware and critical of their own habits of mind. However, the question arises as to whether an overcrowded enabling curriculum can accommodate the degree of transformative learning required for effective CT development that extends beyond simply the acquisition of transferable skills.*

## **Introduction**

USQ has a number of strategies for providing pathways for entry into higher education for a diverse range of students. An emphasis has been given to ensuring that these do not serve to compromise mainstream academic entry standards or place unrealistic expectations on students approaching higher education study from socioeconomically (LSES) or educationally disadvantaged backgrounds. One strategy is the use of a Foundation Diploma program which provides credit for articulation into mainstream undergraduate programs at USQ. The Diploma which was developed jointly by USQ Faculties and the University's Open Access College (OAC) operates essentially as an open access pathway which provides significant levels of individualised student support and exit level standards appropriate to the level of undergraduate credit that is afforded.

Six separate diplomas are offered through OAC covering the broad disciplines of Aboriginal and Torres Strait Islander studies, business, creative arts, engineering & spatial science, science and social studies. Four of the eight subjects in each diploma program are common core foundation subjects developed and taught by the OAC, while the remaining are discipline-specific subjects provided by the relevant Schools. These foundation subjects provide the basis for engendering educationally disadvantaged and first generation students with a range of skills that are typically not well provided for in the educational backgrounds of these students but which are critical to their successful transition and future persistence and progression in undergraduate study.

One of the core skills that the foundation component of the diploma courses seeks to inculcate is 'critical thinking' (CT) which makes up 70% of one of the core subjects.

### **CT as a core undergraduate skill**

CT has been variously defined as thinking that is: reasonable and reflective (Ennis, 1989); that displays mastery of intellectual skills and abilities (Paul, 1993); that enables an individual to engage in activities with reflective scepticism (McPeck, 1990); or that enables an individual to be appropriately moved by reason (Bailin & Siegel, 2002). Overall, CT may be thought of as thinking that is sceptical, open-minded, evidence-based, rigorous, principled and heroic. CT is viewed as being crucial for all contemporary academic contexts as it is seen as providing an attitude and/or an inter-related set of core academic skills that ensure objective analysis, deep understanding, effective problem solving and the development of self-directed learners which all lie at the heart of academic process (Nosich, 2009). It is also seen as an essential element across general and professional education in response to the rapidly changing professional and workplace environments whereby CT serves as a basis for positioning all individuals to operate effectively in an increasingly demanding knowledge society where the sheer volume and diversity of readily-accessible information sources creates its own special challenges and pitfalls (Paul 1993). CT, therefore, provides a basis for the conduct of sound scholarship and the development of effective self-directed learners.

Put simply: "critical skills are vital to post-secondary success" (Kenedy, nd) and the value of teaching CT early in undergraduate study has major benefits. Its consideration as a foundation or transition skill is becoming increasingly evident - arming the student with important skill sets, providing an awareness of academic culture and expectations on students, fostering an awareness that knowledge is contestable, providing a platform for 'unlearning' inappropriate habits and biased mind sets and providing enabling students with a boost in confidence and self-esteem (Brown & David, 2010; Beasley & Cao, 2012; Clarke, 2011).

### **Assessing curricular strategies for the teaching of CT**

While CT is clearly a desirable skill for undergraduate students to have, and to develop to a high degree as early as possible in their undergraduate experience, there have been surprisingly few empirical studies on the effectiveness of different strategies for promoting the development of CT skills in undergraduate students (Lampert, 2007). As a result, the literature remains divided on the best strategies for providing students the opportunities to develop their skills in CT; particularly in relation to whether it should be taught as a distinct generic subject as part of a foundation program or whether it is required to be taught within a specific discipline context (Bailin & Siegel, 2002, 1998; Moore, 2004; Weinstein, 1993).

An important consideration is the degree to which CT in the curriculum is simply concerned with skills development, or whether some deeper form of learning is involved. Skills development is certainly an important outcome of the study of CT. Skills such as observing, reasoning, analysing and problem solving (Ennis, 1989) are critical to academic success. This is important not only from the view of engendering foundation students with core transferable skills but also for a major target group for the

Foundation Diploma - students who just missed the normal entry requirements. Here, putting an emphasis on improving important core academic skills gives students who present as academically weaker, the edge they require to successfully transition into mainstream undergraduate study.

However, a study of CT involves more than simply the development of a core skills set. Paul (1993) sees CT more as a set of behaviours and psychological traits that represent a core set of attitudes, approaches and understandings that are equally important in positioning students for success. The need for students to understand and access the university culture has already been discussed - but there are other barriers that students must overcome. Kalmar (2002) points out that, during the course of study, many students will come to adopt viewpoints and ideas that are very different from those they had when they entered higher education. The ability to be openly critical of oneself and the capacity to be open to change as a result of that self-analysis can be confronting to many students; and the study of the discipline of CT can significantly facilitate this transformative process of self-change.

### **Strategies for encouraging CT through transformative learning**

A critical feature of the program is that it seeks not only to facilitate students acquiring core CT skills - including observing, inferring, generalising, reasoning, analysing, assessing statements and critiquing arguments (Ennis, 1989) – but also employs transformative learning strategies that move the students confidently towards the behaviours and attitudes of sound critical thinkers. The demands of ensuring students develop a minimum level of competency in the range of transferable skills covered places significant demands on the subject curriculum. However, it has been found that transformative learning strategies can also be employed despite a busy curriculum using a planned and considered approach. What is more, the value of this effort is clearly and consistently indicated through the outcomes of student subject evaluation exit surveys (Clarke, 2012).

The building of competencies typically involves getting students to undertake repeated practice of selected exercises with discussion and feedback as a basis for skills building through experience. Transformational learning as described by Mezirow and others (Mezirow, 1997; Merriam, 2004; Taylor, 2008), on the other hand, involves learning that challenges the deep-seated habits of mind that influence an individual's specific point of view. These habitual ways of thinking, feeling and acting that develop as a result of political, psychological, educational and socio-cultural influences require to be challenged if a student is to acquire the honest self-reflection and objective thinking that forms the basis of critical thinking; essentially moving from an individual frame of reference to an academic frame of reference as defined by the Western tradition of scholarship.

Transformative learning requires strategies that encourage students to actively engage with alternative points of view and critically reflect (Mezirow, 1997; Merriam, 2004; Taylor, 2008).

Education that fosters critically reflective thought, imaginative problem posing and discourse is learner-centered, participatory, and interactive, and it involves group deliberation and group problem solving (Mezirow, 1997, p. 10).

Specific approaches to facilitating transformational learning are provided within a developmental framework. The following discussion includes examples of approaches used.

### CT subject week one transformative learning strategies

As this is a fully on-line program special consideration needs to be given early to position students to fully engage in discussion groups and forums as a basis for ensuring the involvement in active discourse that is so important to transformative learning taking place. Hence strategies that encourage students to engage actively in the online discussion group such as posting personal introductions, encouraging responses to simple but provocative prompts and team building strategies such as those that arise from the sharing of personal aims and experiences are undertaken from the first day of study. Students are also encouraged to share ideas and resources from an early stage to promote both active participation and to ensure that the discussion forum is seen as relevant and useful for all students, further encouraging participation. These early strategies to promote active engagement, team building, confidence building, relevance and the articulation of study aims of course also represent well-established strategies for promoting student persistence more generally (Tinto & Pusser, 2006).

An important feature of the CT subject is that it is studied by all Foundation Diploma students across the various disciplines offered and all participate in the same discussion forum. This, together with the diverse student body that is attracted to USQ online programs, helps to ensure that from the very start of the course students are exposed to a range of differing perspectives. In this regard, an important early exercise involves students reflecting on the relevance of CT to their chosen discipline. An example involves students being asked to perform a Google search using the prompt “*Critical Thinking and [my discipline]*” and to share their findings with the forum.

The importance of self-awareness as a basis for self-reflection has led to the program asking students in the first week of study to develop personal profiles. This includes the use of quizzes concerning individual approaches to learning and a self-evaluation of CT skills.

Thirdly, an early exercise begins the task of challenging students’ habits of mind in a non-threatening and amusing way. This involves a simple, naïve diagram of a bus against which students are asked to determine in which direction the bus is travelling. Students are then teased with the fact that 96% of Australian pre-schoolers gave the correct answer. It is finally reported that the bus is travelling to the *right* because the bus door is not visible. This has proven to be a simple but effective device to get students to reflect on the influence of habits of mind and illustrates the fact that useful exercises that promote transformative learning do not have to be complex or time consuming.

Standard clear thinking exercises are begun early and continue throughout the subject in increasingly sophisticated forms. These oblige students to adopt differing perspectives, problem solve, identify their own biases and generally challenge their own norms. Early in the subject it is particularly important that these are non-threatening and this can be assisted immeasurably by the use of humour and making the exercises fun to do. As the course progresses these morph into more rigorous and personally challenging CT exercises.

Offering brief, quirky scenarios such as ‘Is the teacher right to be calling the boy wrong?’ - which involves students analysing the appropriateness of a teacher posing a question to a student of “what is your favourite animal?” and calling his response of “KFC” as “wrong” – both introduces the students to the process of reasoned analysis and alerts the students to the challenge of indeterminate solutions and ‘shades of grey’; and how to deal with them in practice. A typical response from a student who has benefitted from this activity follows:

I don't think the teacher is right calling the boy wrong. The way he perceived the question is different to other children and the teacher, this does not make him wrong. He feels like he has honestly and appropriately answered the question. Everybody has their own individual outlook on everything, our minds work differently. Being different does not make you incorrect.

### CT subject early transformative learning strategies

In the development of the CT subject a decision was made concerning the need to not only expose students to CT but to engage in an explicit study of CT itself. The importance of this to students’ attainment of effective CT skills has a strong base in the literature (Rust, 2002) and its need is illustrated by the simple observation that: “*Most students can’t ‘pick up’ critical thinking skills along the way in a course that focuses on content. They need explicit instructions in thinking critically*” (Centre for Teaching, 2012).

Early in the course, students study Bloom’s Taxonomy of the Cognitive Domain, which is compared and contrasted to a schema for stages of intellectual development according to Perry, both as cited in Gocisk (1997) and as adapted by Barker (2011). While this might appear challenging to enabling students early in their study it is extremely useful in that it imparts a sense of intellectual development, growth and adjustment as being normal consequences of study. This very effectively introduces students to the notion that change and transformation, rather than simply the accumulation of competencies, is a normal expectation of university study – which for many is a revelation. The study culminates with an exercise that asks students, both individually and as a group, to reflect on either or both of the following questions: *Respond either to Barker’s comment that in developing high-level thinking “We may experience a profound sense of loss” or “Where do you see yourself in Perry’s stages?”* This effectively turns the abstract into the concrete and personal and it has proved particularly valuable as an exercise for students in practice. The following response from a student is not at all atypical and reflects significant insight:

Barker means ... that for something new to be developed, there must be a new foundation built, removing the old that we may have been comfortable and familiar using ... It can often seem so easy to stay where we are and not push ourselves but when we do there is ... one of the most satisfying feelings of accomplishment.

This study also provides a basis for looking at different learning cultures – in this subject an exercise compares school learning environments in Japan and the USA – which in turn provides the basis for discussion about the university culture in which the students are entering. Discussing the university culture explicitly has proven effective in providing ‘first in family’/first generation students with a clear appreciation that they need to come to grips with something that is different to what they may have expected

and alerts them to the need to investigate what the institution expects of them. This engendering of a need for wariness in an alien culture is further emphasised later in the program by the inclusion of a brief study of other intellectual traditions which ultimately argues for CT as a global tradition.

Students are also encouraged to consider a case study of ‘a great critical thinker of the past’ from an extensive table of historical greats from all disciplines extending back before Socrates. While this may be considered an extravagance in an enabling subject it has proven of considerable interest to most students, and inspirational to some in further demonstrating the value of differing perspectives, as well as demonstrating how CT applies to all disciplines and contexts.

### CT subject middle transformative learning strategies

This stage of the CT subject requires students to ‘build their toolkit’ and considerable time is devoted to transferable skills development. This involves a study of reasoning and developing skills in critical analysis by ‘asking the right questions’ concerning elements such as context, audience, purpose, question at issue, conclusion/thesis, premise/reasons, assumptions, information, implications and consequences, and alternatives. Students may find the mechanical nature of this study difficult and laborious; but for many it is proves to be transformative in itself. Some students have an inherent sense of sifting through and analysing an argument, but most students require an ordered structure and a clear process to guide them through effective analysis. This is a stage where weaker students may falter, but the discipline provided by successfully navigating this stage empowers students.

Underlying this course of building practical academic skills is the need to have students thinking about thinking as a basis for encouraging the self-awareness, reflection and ‘unlearning’ of inappropriate habits of mind needed to promote objective analysis. This typically occurs through prompts that are interspersed throughout the skills development exercises as well as weekly exercises provided to the study forum.

As an example of an exercise used: Students are asked to rate 10 words within a picture slideshow according to how well they align with the concept of CT – *I, we, ego, love, smile, rumour, success, jealousy, knowledge, friendship*. ‘Knowledge’ (or ‘success’) should rate highest, with ‘rumour’ and ‘ego’ placed furthest away.

Regular simple metacognitive exercises such as this and the associated discussion on the student forum seek to continually challenge students to think more deeply about their practices as they practice their skills of analysis, problem solving and other basic CT competencies – helping to ensure they are developed as critical competencies.

It is at this stage that students come to appreciate that in CT terms, concepts such as ‘critical’, ‘argument’ and ‘sceptic’ do not carry negative connotations; that the role of a good scholar is to challenge claims to knowledge, and that a scholar’s best stance is to remain open-minded but be difficult to convince. It is also the stage where students come to appreciate the fact that real-life problems tend to be complex and lack ‘black and white’ solutions, and that this is the reason why academic debate is always ongoing. These are important insights for students to access academic culture and to come to understand the expectations that university puts on them.

Throughout the program, students are regularly reminded that good critical thinkers need to have a deep knowledge of themselves in order to resist inherent biases, need to be heroic in terms of having the courage to face harsh realities, a willingness to place differing worldviews into perspective, and visionary in terms of using CT to see the ‘big picture’ (Paul, 1993).

## CT subject late transformative learning strategies

The final stage of the CT subject represents the ‘implementation stage’ where students practice critical analysis and evaluation while learning additional concepts in the form of types of argument, academic written standards, identifying fallacies and understanding and evaluating research methodology.

In terms of transformative learning strategies the aim continues to be to encourage students to actively engage with alternative points of view and critically reflect; but now with exercises with a much harder edge. A major assessment item concerns analysis of articles about an issue for which all students tend to hold strong opinions – analysing arguments for and against the death penalty – which challenge students to remain aloof and objective. As another example, the following final exercise is provided to students before they leave the subject. Noting that ethno-centrism and nationalism have been identified as amongst the most deep-seated and rigid mind habits (Mezirow, 1997), this exercise is intended to be confronting, confusing and challenging for domestic Australian students. Strategies are employed to ensure that a response to the first question is completed before the second question is read.

Question 1: in the lead-up to the centenary of ANZAC Day, the Australian War Memorial is seeking to ensure that all those who have died defending Australia are identified and honoured. Do you agree with this occurring? Why or why not?

Question 2: In his book *The Forgotten War*, historian Henry Reynolds reports that at least 30,000 Aboriginal and Torres Strait Islander Australians died in the 19th and early 20th centuries defending northern Australia from invasion by European settlers. Do you agree with these Australian patriots being recognised by the Australian War Memorial? Why or why not? Why do you think that the Australian War Memorial is not taking this step?

During this final stage of the subject students study the Scientific method. In association with this study students are encouraged to discuss topics such as the following which provide added insights into the mindset that underpins the Scientific method:

- Occam’s Razor
- Intellectual humility
- The limits of research

In relation to the final point, students are encouraged to tackle issues such as:

- What is the role of qualitative analysis and subjective thought?
- How do we measure the importance of philosophy to modern society?
- What is the role of ethics in academic discourse? How do we deal with values-based judgements?

The aim here is not to seek to encourage students to develop definitive positions on any of these issues but simply to open students' minds to the issues.

The course concludes with a brief consideration of the relationship between CT and creative thinking.

## Conclusion

CT is variously described as involving a broad range of transferable skills such as required to undertake critical analysis and problem-solving and a set of behaviours and attitudes that characterise a critical thinker. A well-rounded program in CT provides enabling students with a sound platform for success in undergraduate study, providing not only essential skills and knowledge, but the basis for accessing the academic culture and understanding the expectations on them.

Transformative learning strategies seek to engage students in discourse and encourage self-reflection as a basis for challenging the states of mind on which individuals derive their specific points of view. While it is tempting in a busy enabling curriculum to concentrate mainly on transferable skills development for CT, simple strategies can be seeded throughout the program that both support the skills development - for example by encouraging objective and rational thought – and position the program to transform the student into an alignment with academic attitudes and ways of knowing. This is particularly relevant for students from disadvantaged groups such as LSES and 'first in family' who typically present for study with little knowledge of the university culture and environment.

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