

Best Practices for Building a Critical Reflective Curriculum to Foster Metacognitive Growth in the Higher Education Classroom

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Abstract: Educators in higher education recognize the importance of metacognitive skills, but they are unclear about how to teach in a way that supports metacognitive development. The following article offers some basic principles of best practices to help teachers integrate critical reflection into an existing content-based course.

Keywords: Metacognition, reflection, higher education

Metacognition, or “one’s ability to monitor, evaluate, and make plans for one’s learning” (Tobias & Everson, 2009, p. 107), has important impacts on student learning. Strong metacognitive skills have been connected to self-control, intrinsic motivation, executive function, self-concept and self-regulated learning (Hacker, Dunlosky, & Graesser, 2009). In addition, a sense of personal agency is intimately connected with self-knowledge, awareness, and control of cognition (Negretti, 2012).

Educators in higher education have increasingly begun to recognize the importance of students’ metacognitive skills, but they are unclear about how to teach in a way that supports metacognitive development. The following article offers some basic principles of best practices to help teachers integrate critical reflection into an existing content-based course.

REVIEW OF LITERATURE

Many theorists have written about the importance of intentional mental recursivity, or critical reflection, as an important academic habit (Emig, 1983, Flavell, 1976, Flower & Hayes, 1981, Freire, 1970, Sommers, 1980) as well as the relationship between student agency and academic success (Elbow, 1998, Freire, 1970, Hacker, et al., 2009, hooks, 1994). Pina Tarricone, author of *The Taxonomy of Metacognition* (2011), wrote that that learners must be able to access deep knowledge gained through memory and experience in order to marshal appropriate strategies in problem-solving contexts. The process of accessing that knowledge only happens through reflection. Reflection can be an experience of private, wandering introspection, but in order for it to serve a learner, it must be “focused and applied” (p. 43). Verbalization, whether aloud, in informal or formal writing, is an important part of the constructive reflective process. She wrote,

“Reflection including verbalization is essential for the development of metacognitive strategies and the monitoring and regulation of these strategies, especially in complex problem-solving contexts” (p. 27).

Tarricone showed that critical reflection is vital to developing skills in agency, higher-order thinking and problem-solving (Hacker et al., 2009; Tarricone, 2011); in order for a student to successfully negotiate a learning task, she must have a clear understanding of herself, the task, and the strategies available to her (Flavell, 1976). In other words, when confronted with a new learning situation, students with strong metacognitive skills know to ask themselves, “Who am I and how do I relate to this situation? What do I need to do, or what is being asked of me? And how can I do it, or what strategies do I have available?” A break down in any of these three areas compromises the learner’s ability to negotiate a problem-solving situation (Flavell, 1976).

Critical reflection helps the student retrieve stored knowledge about tasks and strategies, and it helps develop the kind of self-knowledge required for strong problem-solving skills (Tarricone, 2011). Kathleen Blake Yancey (1998), a leading scholar of reflection calls critical reflection “reflection-in-action” (p. 24). In her book *Reflection In The Writing Classroom* (1998), Yancey said that when students practice reflection-in-action, they “think critically about the thinking that got [them] into this fix or this opportunity; and [they] may, in the process, restructure strategies of action, understandings of phenomena, or ways of framing problems” (p. 24).

METACOGNITIVE THEORY IN PRACTICE

What follows is a discussion of best practices for educators who are interested in integrating critical reflection into their classes in order to help students develop their metacognitive skills.

START AT THE VERY BEGINNING AND PRACTICE EVERY DAY

Although critical reflection is sometimes associated with a kind of thinking students do after completing a project, essay, or exam, it should be integrated throughout the entire arc of a student’s learning. The metacognitive skills of predicting, monitoring, and evaluating one’s learning (Tobias & Everson, 2009) are habits of mind and habits of mind are built through repetition. Critical reflective work can take on many forms, but should always require students to predict, monitor, and/or evaluate their own learning. Asking students to keep a metacognitive log or journal will give them a place to keep track of the various responses they create in and out of class.

PAUSE YOUR OWN FORWARD MOMENTUM IN CLASS

Most educators are sensitive to the compressed timeframe they have for teaching course material, but pushing continuously forward in class will not help the students learn more efficiently. Learning happens in recursive loops. In class, teachers can ask students to review their lecture notes, make sure they can read their own writing, and spend a moment letting them process the work they’ve done so far. Other in-class

critical reflections can also allow students time to consider how the current class's content relates to their own projects or assignments.

ASK STUDENTS TO WRITE

Writing is tied closely to critical thinking and metacognitive growth (Bean, 2011, Belanoff, Elbow, & Fontaine, 1991, Berthoff, 1984,). Hacker, Keener, and Kircher (2009) argue, "writing is applied metacognition" (p. 154). A writer has to understand a concept before he can write about it, so in metacognitive terms, students have to understand their own thinking and learning before they can write about them well. Written critical reflections also allow students to track their own thinking. Memory is revisionary, especially in learning: Once we have made it past a complicated hurdle in learning, we often forget how difficult it was to get there. Written metacognitive work puts the evidence of the thinking in front the student and allows her to be the observer of her own thinking and learning.

DESIGN SPECIFIC, DIRECTED REFLECTIVE QUESTIONS

General reflective questions like "what do you think of this?" or "how did it go?" seem as though they would elicit a wide variety of responses, but instead they allow students to answer without critically examining their learning. Design questions that ask students to consider the relationship between themselves, the learning task, and their strategies for achieving the task's learning goal or outcomes. For example, questions like, "what is this project's main objective?" or "what do you think I expect from this assignment?" ask the student to critically consider the learning task.

DON'T ASSUME THAT STUDENTS KNOW HOW TO CRITICALLY REFLECT

Students are often unsure about how to react to critical reflective work, especially if the questions are not specific and directive. Talk to your students about the importance of metacognitive skills and their relationship to critical reflection. Explain to them why you are interested in helping them develop their metacognitive skills as well as the potential benefits they might receive from the work.

IMPORTANCE TO EDUCATION

Students with strong metacognitive skills can understand a learning task, predict what the task will require of them, and then, based on their own histories and skills, they can choose a strategy that will help them meet the challenge of the task. Teaching critical reflection fosters metacognitive skills that not only help students engage more fully in their current classes, but predispose them toward improved problem-solving skills and increased learning transfer.

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