



# Fostering Student Reflection for Deep Learning

## Why Reflection?

*Reflection is an excellent online tool to help students focus on their learning and learn more deeply. Take advantage of the online environment to set each student up with a private discussion forum in Moodle that can serve as a private journal.*

- Generation: rephrasing key ideas in your own words, visualizing what you might do differently next time; new knowledge; makes the mind more receptive to new learning (Brown et al, 2014, p. 89, 208).

One excellent teaching and learning tool that is prime for social distancing AND leads to deep student learning is reflection. Why? Research shows that reflecting on learning experiences leads to more learning than simply experience alone (Brown et al, 2014; Fink, 2013; Doyle, 2011; Ambrose et al, 2010; Bowen, 2012; and others).

### Why is reflection so powerful?

Reflection involves several cognitive activities:

- Retrieval: recalling recently learning knowledge to mind (Brown et al, 2014, p. 27, 66);
- Elaboration: connecting new knowledge to what you already know (Brown et al, 2014, p. 89, 207; Doyle, 2011, p. 145); and

### Why is this important?

Research shows that students cling to previous knowledge, even if all evidence points to it being incorrect (Bain, 2004, p. 23)—mental models change slowly (Bain, 2004, p. 27-30)! Reflection increases the number of connections our students can make between new learning and prior knowledge (Doyle, 2011, p. 145). To this end, Bain (2004) outlines that good “questions are crucial” to learning, as they help students construct knowledge and make meaning from experience. Bain tells us that “Some cognitive scientists think that questions are so important that we cannot learn until the right one has been asked: if memory does not ask the question, it will not know where to index the answer. The more questions we ask, the more ways we can index a thought in memory. Better indexing produces greater flexibility, easier recall, and richer understanding” (p. 31).

### How, then, do we get students to reflect? Ask the right questions!

- Without appropriate prompts to aid reflection, students don’t have the capacity to assimilate new knowledge (Bain, 2004, p. 31)
- Through the process of generation, reflection allows students to construct new knowledge (Bain, 2004; Brown et al, 2014, p. 208)

While the following examples of reflective prompts are generic, we in CELT can help you craft prompts that are specific to your own context. The following prompt examples come from Fink (2013, p. 118):

- What have I learned?
- How did I learn that?
- What helped me learn? What didn’t help me learn?

- What does that tell me about the nature of my learning? About myself as a learner?
- How do these new experiences relate to my prior beliefs about reality and my values?
- Do these new experiences contain any implications for my future life as a professional, as an individual, as a member of various social groups, or as a member of difference political communities?
- Does this recent learning create a need or desire for additional learning?
- Of so, how would I learn that? Read a book, talk to someone, do an experiment, attend a conference or workshop, or something else?

These writing prompts are from Bowen (2012, p. 167-68):

- What does the text say?
- How do you or others interpret this text?
- How do you understand this text?
- Why is this text important?
- How does this text do a good or poor job of conveying its message?
- Why is this passage important?
- Why is this passage disturbing?

### **Examples of reflective assignments that can be used in an online environment**

- Classroom discussions
- Journals (this can be done in Moodle—each student can be set up with a private discussion forum)
- Writing assignments, independent or collaborative
- Portfolios
- Any kind of self-assessment (Ambrose et al, 2010)

In conclusion, reflection is a powerful learning tool: it improves recall, understanding, and application of theory to real-world situations. It also works well in remote teaching. Let us help you craft reflective assignments and prompts for your courses.

## **Resources**

- Ambrose, S. A., Bridges, M. W., DiPietro, M., Lovett, M. C., Norman, M. K., & Mayer, R. E. (2010). *How Learning Works: Seven Research-Based Principles for Smart Teaching* (1 edition). Jossey-Bass.
- Bain, K. (2011). *What the best college teachers do*. Harvard University Press.
- Brown, P. C., Roediger, H. L., & McDaniel, M. A. (2014). *Make It Stick: The Science of Successful Learning*. Belknap Press.
- Bowen, J. A. (2012). *Teaching Naked: How Moving Technology Out of Your College Classroom Will Improve Student Learning* (1 edition). Jossey-Bass.
- Doyle, T., & Zakrajsek, T. (2011). *Learner-Centered Teaching: Putting the Research on Learning into Practice*. Stylus Publishing.
- Fink, L. D. (2013). *Creating significant learning experiences: An integrated approach to designing college courses*. John Wiley & Sons.