Application Opened

**1-3aBloom’s Taxonomy**

One of the most well-known figures in the world of critical thinking is Benjamin Bloom (Anderson & Kratwohl, 2001). See Figure 1.6 for a visual image of Bloom’s Taxonomy. Basically, Bloom identified the various levels of knowing. He encouraged educators to think about what they really wanted students to be able to do with the information being learned. Did they want their students to simply memorize or remember the information, or did they want them to engage in a higher-level task where they had to apply the information to a new situation or make a judgment based on what was learned? As you can see from Figure 1.6, being able to remember information is the first step. In order to engage in more complex cognitive tasks, you will need to know about the subject matter. The other levels are understanding, applying, analyzing, evaluating, and creating. Each cognitive task builds on prior skills and is more challenging in nature.

**Figure 1.6Bloom’s Taxonomy**



Source: Adapted from [http://laurieodonnell.co.uk/?p=632/](http://laurieodonnell.co.uk/?p=632/" \t "_blank).

Creating is the goal. Based on what you’ve learned (working all the steps of the pyramid), your professors are going to want you to create academic products such as papers and presentations. Thus, you need to be able to remember, understand, apply, analyze, and evaluate information in order to be successful at creating academic work. It’s important for you to know that it takes time and effort to get to the top of the pyramid. As you do so, you’ll discover that your thinking patterns will shift from simplistic to sophisticated. Using the process described in the next section, you’ll be developing these higher-level thinking skills in no time!

**Time for Action 1.6**

**Bloom’s Taxonomy and Critical Thinking**

You’ve just read about critical thinking and Bloom’s Taxonomy. Earlier, you reviewed your course syllabi. Take a few minutes now to review your syllabi through the critical thinking lens. What assignments and activities will you be doing this semester? Do these activities require lower- or higher-level cognitive skills (according to Bloom’s Taxonomy)? Write down at least one example of a task you have to do that targets the bottom half of the pyramid and at least one task that will require you to engage in the higher-level thinking skills listed in the top half of the pyramid. This activity will not only help you understand Bloom’s Taxonomy and critical thinking but will also help you see the purpose of your learning tasks.

**1-3bThe Process of Becoming a Critical Thinker**

So now you know that your professors will want to you analyze, evaluate, and create, but how do you develop these skills? For starters, you need to focus on three foundational conditions. You need to remember content (knowledge base), believe in your ability to engage in critical thinking (self-efficacy), and be motivated to learn (desire/drive). The following two learning conditions are then needed: challenging learning opportunities and support. Once all of these conditions have been met, you will be able to easily engage in productive, high-level thinking. See Figure 1.7 for an overview of this process for becoming a critical thinker. The process is cyclical in nature. Productive thinking increases knowledge, self-efficacy, and motivation. These increased foundational skills, combined with a challenging and supportive learning environment, lead to even more productive thoughts and actions.

**Figure 1.7The Process of Becoming a Critical Thinker**

**Foundational Condition 1: Knowledge**

Let’s explore this process in more detail. As indicated in Bloom’s Taxonomy (Anderson & Kratwohl, 2001), the first step is to remember the course content you are learning. Neuroscience research has demonstrated that it is easier to learn new information when you connect it to something you already know(Goswami, 2008). Thus, the more you know, the easier it is to learn. It’s impossible to become a critical thinker without knowing a lot of information(Willingham, 2009). In college, you’ll be constantly building this knowledge base because there is so much new information to learn—definitions, theories, concepts, and other important information in each field you are studying.

You are obviously entering college with knowledge. While you are in college, you add to or modify your current knowledge base. In some courses, you’ll be exposed to content that you have not yet encountered. In other courses, you may discover new information about a concept or may even be challenged to think about whether or not what you know is accurate. Knowledge about how to critically think is therefore also important. Your foundational knowledge can be continually modified as you think more deeply about content and continue learning. In the next chapter, you will learn how memory works and strategies to help you remember the enormous amount of new content you’ll be exposed to as a college student.

**Foundational Condition 2: Self-Efficacy**

Becoming a critical thinker involves more than just cognitive work. Our beliefs about ourselves also matter. The second foundational condition is self-efficacy. Self-efficacy refers to your belief about whether or not you can successfully complete a task such as critical thinking (Bandura, 1997). If you think you will be able to do a task, you will be much more likely to put in the effort needed and will also be more likely to keep trying even if you experience some difficulties along the way. The way in which we think about ourselves and our abilities undoubtedly drives our actions. Check out Chapter 4 to learn more about the importance of self-efficacy and for some tips on how to increase your self-efficacy.

**Foundational Condition 3: Desire and Drive**

The third foundational element is your desire and drive—otherwise known as motivation. You may know a lot about a topic and think you can do a critical thinking task successfully but not be interested in doing so. Let’s face it—critical thinking takes work. Why would you want to do the task if you don’t think it’s important or worthy? When you believe the task is valuable and meaningful, you are more likely to have the desire and drive to work toward the upper levels of Bloom’s Taxonomy. In Chapter 4, we’ll be exploring several motivational theories and approaches that will help you with this important step. For example, you’ll discover how behavioral, cognitive, humanistic, and social motivational theories can be put into action to increase your desire and drive to successfully complete challenging cognitive tasks.

**Learning Condition 1: Challenging Learning Tasks and Opportunities**

There are two learning conditions needed for the development of critical thinking skills: challenging learning opportunities and support. Let’s discuss challenging learning tasks first. Some of these learning challenges will be a natural part of your college experience. For example, your professors will require you to engage in a variety of learning tasks such as in-depth discussions, debates, research papers, and presentations. Make the most of these opportunities; they facilitate deep learning and critical thinking skills.

You will also want to take advantage of challenging learning opportunities outside of the classroom. For instance, you can seek out opportunities to work with faculty on research or other projects, become a leader of a club or organization, participate in campus-wide events, or get involved in community service projects. Many of these activities force (or at least strongly encourage!) you to view the world from multiple perspectives. Research has shown that these out-of-class experiences can sometimes even play a more important role in developing critical thinking skills than traditional in-class learning experiences for many students (Loes, Pascarella, & Umbach, 2012).

**Learning Condition 2: Learning Strategies and Support**

It is important that you are supported as you strive to achieve success with the challenging tasks just discussed. Learning is a social activity and we learn best when others assist us with tools and general support. This course is focused on helping you develop research-based learning strategies that help you learn material and work your way up Bloom’s Taxonomy (Anderson & Kratwohl, 2001). For example, you’ll want to know how to best learn information when reading, while in class, and of course while you are preparing for an exam. While supportive strategies are discussed throughout the text, Chapter 2contains many learning strategies you’ll want to know.

In addition to knowing about general learning strategies that work, you may also need specific support related to academic tasks. For example, guidance about how to read a scholarly journal or write a research paper would probably be helpful. Your professor will often be your best resource. Professors can support you in many ways, such as providing you with a good foundation of information, supplying guidelines about assignments (maybe even rubrics or models), and being available during office hours or by e-mail. There are many other campus supports such as librarians and tutors available as well. Your classmates may also become a part of your support team. We learn best when we interact with others (Goswami, 2008), so be sure to reach out to your support system as needed.

Once you’ve got the foundational and learning conditions met, critical thinking will happen naturally. Your background and experiences will constantly play a role in your thinking. As your critical thinking skills develop, you’ll find yourself automatically analyzing and evaluating information to create amazing presentations, papers, and other work.

**Time for Action 1.7**

**Supports to Help You with Challenging Tasks**

Review your syllabi again. How can you access support from your professor? Are details about assignments, rubrics, or samples provided? Check out your college’s website to find out about other resources such as tutoring or library support that can help you successfully complete your assignments.

**Quick Quiz 1.3**

1. According to Bloom, what are the different levels of knowing?

Answer

The levels of knowing identified by Bloom are: remembering, understanding, applying, analyzing, evaluating, and creating.

1. What are the three foundational conditions needed to become a critical thinker?

Answer

The three foundational conditions are having a strong knowledge base, high self-efficacy, and desire and drive.

1. What are the two learning conditions needed to become a critical thinker?

Answer

The two learning conditions are challenging tasks and opportunities and learning strategies and support.

https://cft.vanderbilt.edu/wp-content/uploads/sites/59/Bloomtaxonomy-e1445435495371.jpg