Week 1: Lecture 1 - Critical Thinking

*Cogito ergo sum* – I think, therefore I am. These words, made famous by French Philosopher Rene’ Descartes, were intended to serve as a foundation for knowledge and provide certainty of our own existence in an age of extreme skepticism and doubt. Ultimately, Descartes views the act of doubting as a conscious act of thinking and as a starting point for knowledge:

“While we thus reject all of which we can entertain the smallest doubt, and even imagine that it is false, we easily indeed suppose that there is neither God, nor sky, nor bodies and that we ourselves even have neither hands nor feet nor, finally, a body; but we cannot, in the same way, suppose that we are not while we doubt of the truth of these things; for there is a repugnance in conceiving that what thinks does not exist at the very time when it thinks. Accordingly, the knowledge, I think, therefore I am, is the first and most certain that occurs to one who philosophizes orderly.” - René Descartes, Principles of Philosophy

While there are plenty of critics of Descartes’ conclusion that thinking affirms our existence, for the purposes of this course, we are going to side with the French philosopher and assume not only that we think and therefore exist, but that thinking happens whether we think about it or not…

We all think. But while this activity – this function of our being – happens naturally as a process of our very essential nature, thinking takes many forms, not all of which we engage in instinctively or automatically. You are in a college course as you advance your own formal education. Along the way, you will learn many facts, acquire knowledge and develop an understanding of principles, ideas, and systems.

But it shouldn’t stop there. Albert Einstein said, “Education is not the learning of facts, but the training of the mind to think.” Yes, you will learn facts…but Einstein made an important point: we must also learn how to think. That word, ‘training’, is key. As individuals, we each think, but the act of thinking can be done well, or not so well. To think well requires training. Critical thinking is a way of thinking that employs the development and use of specific skills and activities to help us to think well.

Analyzing and evaluating…looking closely at thinking…getting into our minds, and getting into the minds of others to understand their reasoning…assessing the quality of our thinking and of others’ thinking…these are all aspects of critical thinking.

Or think of it this way: critical thinking is the act of not accepting what we see, read, or hear, and of carefully analyzing and evaluating all of that with a specific set of tools and skills, motivated by a desire to understand and to improve.

But what tools, and what skills? Before we take a look at some of those tools and skills, it’s best to take a step back and ask why it’s important. Critical thinking is not reserved for philosophers and scientists like Descartes and Einstein, and it’s not only about those ‘big’ questions about existence or the universe or the meaning of life itself.

Sometimes it’s about a breaking news story or a political speech, or maybe a health diagnosis or a budget breakdown for a work project. But it doesn’t have to be something big, or even important. Critical thinking is (or needs to be) used for just about everything.

Case in point: One morning while running his regular 10-kilometer training loop, a man noticed along a quarter-mile stretch several empty Natural Light beer cans in the grass between the road and sidewalk. These were not just regular 12-ounce beer cans, but those 25-ounce Natty Daddy cans. How did they get there? The runner concluded that someone must have been drinking and driving. Isn’t that how empty beer cans end up alongside the road?

However likely, isn’t that conclusion a bit hasty? Are there other possibilities? Maybe someone was drinking and walking. Or, perhaps the cans fell off of a recycling truck or out of the back of a pickup. Maybe there was a block party with insufficient clean-up afterward, or someone just felt like littering. What evidence is there to support the runner’s conclusion? Several beer cans in the grass between the road and the sidewalk, all within a quarter-mile stretch. When you stop and think about it, even for just a moment, a host of possibilities come to mind making the likelihood that someone was drinking and driving seem less likely.

What we do in that pause (which hopefully lasts for more than just a moment) before drawing conclusions might just be critical thinking. Critical thinking in this example not only helps us to determine other possible causes for those cans being there but also reveals assumptions and biases in our own thinking about what the runner observed. It creates doubt about our original conclusion and causes us to review what we observed and what it might really mean.

Critical thinking can be understood as a set of mental and intellectual processes that help us make good decisions and draw better conclusions by evaluating what we see, hear, read, and otherwise experience. While our brains are sort of hard-wired to reason and logically evaluate, we don’t employ those processes consistently, and when we do, we sometimes don’t do it very well.

We can all sit down at a piano, hit the keys with our fingers, and make noise. But playing Beethoven – or even Chopsticks – requires the development and acquisition of specific skills and knowledge, and takes a lot of practice. Critical thinking also requires the development and acquisition of specific skills and knowledge.

**Week 1: Lecture 2 - Critical Inquiry Part 1 - The Elements of Thought and Intellectual Standards**

One of the most important and fundamental critical thinking skills is critical inquiry. Einstein also said: “The important thing is to not stop questioning. Curiosity has its own reason for existing.” Critical inquiry is the practice of asking a variety of investigative questions to stimulate and drive our critical thinking, and ultimately to achieve our goals of understanding and good decision-making.

One could argue that critical inquiry is the core or essential feature or activity of critical thinking. After all, the practice of critical inquiry develops from a posture of doubt as we question what we experience – whether we are questioning its merit, value, accuracy, validity, probability, or even its ethical character.

It’s time to turn our attention to a very important set of common principles that help us understand and practice critical thinking: the **Elements of Thought** and the **Intellectual Standards**.

The Elements of Thought

Everyone thinks; it is our nature to do so. But much of our thinking, left to itself, is biased, distorted, partial, uninformed, or maybe even downright prejudiced. If we want to think well, we must understand at least the basic characteristics of thought, the most basic structures out of which all thinking is made.

Whenever we think, we think for a purpose within a point of view based on assumptions leading to consequences. That was a mouthful…. Our thoughts are formed from our own points of view. That point of view is based upon our individual assumptions (unspoken beliefs about things). Those assumptions lead to consequences. In other words, what we think matters, even if we don’t know why we think it. Moreover, even though we’re not conscious of it in our everyday lives, we use concepts, ideas, and theories to interpret data, facts, and experiences to answer questions, solve problems, and resolve issues.

For example, consider the following scenario: *Alice is trying to decide what to do about her job. She has been feeling unhappy and unfulfilled for some time, but has been staying in the job for the security and benefits. However, she recently had a conversation with a friend who encouraged her to pursue her passions and find a job that aligns with her values and interests. Alice's point of view about her job is based on her societal assumptions about the importance of stability, security, and financial benefits. However, she is starting to question those assumptions and is considering her friend's advice and pondering her own values. The consequences of her decision could have a significant impact on her life and happiness, which is why she is carefully thinking about what to do.*

*As she thinks, Alice realizes that she has been using the concepts, ideas, and theories of her past experiences (such as the time when she felt financially pinched at the prospect of buying a new or used car) and societal norms to interpret her current situation and make her decision. She knows that she has to weigh a multitude of thoughts, and that her choice will ultimately be based on her own personal beliefs, values, and assumptions.*

*In the end, Alice decides to take a leap of faith and pursue her passions.*

What does Critical Thinking do?

Below, is a list of 8 elements of thought, each of which has a specific function in the critical inquiry process.

* generates purposes
* raises questions
* uses information
* makes inferences
* utilizes concepts
* makes assumptions
* generates implications
* embodies a point of view

The Intellectual Standards

As we’ve already learned (and as we all know from our own experience), our thinking is not always perfect, and more often than we’d like to admit, it’s not very good. We are flawed, imperfect creatures! But we are not without tools and resources. To help us think well, we can begin by applying a set of standards to our thoughts, and not only test whether our thinking is good or bad, but also improve the quality of our thinking.  That is, to help us understand and practice critical thinking.

Your video journey is not over yet. Review this brief video introducing [intellectual standardsLinks to an external site.](https://theelementsofthought.org/the-intellectual-standards/).  Watch this before you move ahead (and the text is printed below it on the webpage as well).

There are many other intellectual standards, but those 9 are a good start. The purpose of those standards is to help us test and improve our thinking. And the best way to that is - you  guessed it - to ask critical questions! In other words, to practice critical inquiry. Testing our thinking (and everything else) with questions framed by intellectual standards is basically the defining activity of critical thinking. Remember, our brains are hard-wired to do this sort of thing, but we don’t always do it well.

Review the set of questions (below) based upon those intellectual standards. It’s not an exhaustive list, but provides a great starting point for identifying questions to test our thinking, the thinking of others, and everything we experience!

Resource: [The Intellectual StandardsDownload The Intellectual Standards](https://champlain.instructure.com/courses/2397240/files/336776021/download?download_frd=1)

Those questions are only a few of many and are directed more toward the analysis of arguments. But those intellectual standards can be applied to just about anything we read, hear, or otherwise observe or experience.

In fact...now that you are back from your elements of thought and intellectual standards video marathon, and are armed with a basic set of questions, let’s go back to those beer cans and see how we might apply some of the intellectual standards to test our original thinking about that scenario. The original conclusion arrived at by the runner was that the cans ended up in the grass between the sidewalk and the road because someone was drinking and driving.

So, what kinds of questions might we ask to help us determine how those cans ended up in the grass between the road and the sidewalk? Let’s try a few out:

1. Intellectual Standard: Depth. Is the analysis of the situation thorough? Were there enough details observed to draw an accurate conclusion?
2. Intellectual Standard: Breadth. Have other possible causes been considered?
3. Intellectual Standard: Logical. Is the runner’s conclusion the most likely, considering the actual evidence? Does it make sense based upon that evidence?
4. Intellectual Standard: Fairness. Is the runner biased? Have other viewpoints been entertained? What might an experienced police officer conclude, for example?

Those are just a few of many, many questions that could be asked. As you think of questions to critically analyze your arguments and observations, it’s really important to not get tied to a list of questions. Rather, allow both the elements of thought and intellectual standards, as well as the specific context of the object of your questioning, to frame and guide your questioning.

References

Resource Videos from "[The Elements of ThoughtLinks to an external site.](https://theelementsofthought.org/the-elements-of-thought-one-by-one/)"

Week 1: Lecture 3 - Critical Inquiry Part 2 - Socratic Method

Socratic Method

By the way, none of this is new. The practice of asking critical questions to stimulate critical thinking has been around for a long time. It is most often attributed to the ancient philosopher Socrates (hence, the Socratic method), although its specific origins are not known. During his lifetime in Greece, education was serious business (and like most important things, typically accessible only to wealthy families). Students studied the arts and sciences, languages, law, logic, politics, philosophy, and so on.

Teachers didn’t write on chalkboards or fill Powerpoint slides with text for students to memorize and later regurgitate in a research paper or on a multiple-choice test. Instead, teachers asked questions, and learning emerged in and through dialogue.

Critical inquiry essentially mirrors the Socratic Method; it poses questions to refine our thinking, explore all of the possibilities, develop new ideas, draw out assumptions and biases, etc. While Socrates created actual conversations with his students, the Socratic Method is something we can do as individuals, whether as a student, a professional, or a citizen.

Interactive Transcript: ["Questions for Socratic Dialogue"](https://champlain.instructure.com/courses/2397240/files/336776043?wrap=1)