

## Critical Thinking Skills

### 1. Definition

Critical thinking is the ability to think clearly and rationally, understanding the logical connection between ideas. Critical thinking has been the subject of much debate and thought, for example the ability to recognize fake news. Critical thinking might be described as the ability to engage in reflective and independent thinking.

In essence, critical thinking requires you to use your ability to reason. It is about being an active learner rather than a passive recipient of information.

Critical thinkers rigorously question ideas and assumptions rather than accepting them at face value. They will always seek to determine whether the ideas, arguments and findings represent the entire picture and are open to finding that they do not.

Critical thinkers will identify, analyze and solve problems systematically rather than by intuition or instinct.

Critical thinking is thinking about things in certain ways so as to arrive at the best possible solution in the circumstances that the thinker is aware of. In more everyday language, it is a way of thinking about whatever is presently occupying your mind so that you come to the best possible conclusion.

It refers to the ability to analyze information objectively and make a reasoned judgment. Critical thinking involves the evaluation of sources such as data, facts, observable phenomenon, and research findings. Good critical thinkers can draw reasonable conclusions from a set of information and discriminate between useful and less useful details to solve a problem or make a decision.

Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action. In its exemplary form, it is based on universal intellectual values that transcend subject matter divisions: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, and fairness.

Critical thinking skills allow you to understand and address a situation based on all available facts and information. When using critical thinking skills, you will sort and organize facts, data and other information to define a problem and develop effective solutions.

Critical thinking is the act of analyzing facts to understand a problem or topic thoroughly. Critical thinking often occurs in order of a few steps from identifying a problem or issue to developing a solution. Here are common steps that occur when using critical thinking for problem solving:

- 1) Identify a problem or issue
- 2) Create inferences on why the problem exists and how it can be solved
- 3) Collect information or data on the issue through research
- 4) Organize and sort data and findings
- 5) Develop and execute solutions
- 6) Analyze what solutions worked or didn't work
- 7) Identify ways to improve the solution

Part of being a good critical thinker is being objective. That means analyzing the problem without allowing emotions or assumptions to influence how you think about it. Instead, you should only analyze the problem based on the context and facts you are able to collect.

Critical thinking skills are essential in every industry at every career level, from entry-level associates to top executives. Good critical thinkers will work both independently and with groups to solve problems

Someone with critical thinking skills can:

- 1) Understand the links between ideas.
- 2) Determine the importance and relevance of arguments and ideas.
- 3) Recognize, build and appraise arguments.
- 4) Identify inconsistencies and errors in reasoning.
- 5) Approach problems in a consistent and systematic way.
- 6) Reflect on the justification of their own assumptions, beliefs and values.

A well cultivated critical thinker:

- 1) raises vital questions and problems, formulating them clearly and precisely;

- 2) gathers and assesses relevant information, using abstract ideas to interpret it effectively comes to well-reasoned conclusions and solutions, testing them against relevant criteria and standards;
- 3) thinks openmindedly within alternative systems of thought, recognizing and assessing, as need be, their assumptions, implications, and practical consequences; and
- 4) communicates effectively with others in figuring out solutions to complex problems.

Ways to critically think about information include:

- 1) Conceptualizing
- 2) Analyzing
- 3) Synthesizing
- 4) Evaluating

That information can come from sources such as:

- 1) Observation
- 2) Experience
- 3) Reflection
- 4) Reasoning
- 5) Communication

And all this is meant to guide:

- 1) Beliefs
- 2) Action

### **Critical Thinking Examples In Questioning**

The best way to apply critical thinking is to know what questions to ask in any area of life. Using the questioning techniques below will allow you to get more information and open up a better flow of communication.

The following are examples of critical thinking in the process of questioning:

1. Open-ended questions—provoking elaborated answers
  - In the movie Titanic, why did Rose turn her back on a privileged life?
  - What are your thoughts on the current state of the world’s ecology and how would you go about addressing it?
  - What is the most inspiring part of your work and what elements make this so inspiring?

## 2. Outcome-based questions—reveal personal traits

- How would you explain coding to a 5-year-old?
- If could you choose only 2 exercises to keep in shape what would they be and why?
- Tell me about a time you had to make a decision with incomplete information? What did you do?

## 3. Hypothetical questions—created scenarios

- If you found out that a friend was sleeping with another friend’s wife, how would you handle this information?
- If two employees under your management started arguing aggressively at the workplace, how would you handle this situation? What could be the possible backlashes?

## 4. Reflective questions—to reflect on the process

- What have you personally gained from this experience?
- Do you think there was a more effective way to accomplish what you accomplished and how would you utilize it in the future?
- How has this process made it easier for you to accomplish similar things in the future?

## 5. Structural questions—helps understand the process

- What are the key points to this subject?
- What order is the process executed in and why this order?
- Which elements of this subject would you find unnecessary?

### **In Summary:**

- Critical thinking is aimed at achieving the best possible outcomes in any situation. In order to achieve this it must involve gathering and evaluating information from as many different sources possible.
- Critical thinking requires a clear, often uncomfortable, assessment of your personal strengths, weaknesses and preferences and their possible impact on decisions you may make.
- Critical thinking requires the development and use of foresight as far as this is possible. As Doris Day sang, “the future’s not ours to see”.
- Implementing the decisions made arising from critical thinking must take into account an assessment of possible outcomes and ways of avoiding potentially negative outcomes, or at least lessening their impact.

- Critical thinking involves reviewing the results of the application of decisions made and implementing change where possible.

Critical thinking isn't just for detecting fake news, however. You also need it to make accurate decisions. Should you buy a house or rent? Eat paleo or vegetarian? Go to college or drop out and start a company? Each of these decisions is difficult and important, so being able to think critically about them can make a huge difference in your life.

### **Why Do Employers Value Critical Thinking Skills?**

Employers want job candidates who can evaluate a situation using logical thought and come up with the best solution. Someone with critical thinking skills can be trusted to make decisions on his or her own and does not need constant handholding.

It's no surprise that critical thinking abilities are some of the most sought-after skills in almost every industry and workplace. You can demonstrate critical thinking by using keywords related to this skill in your resume and cover letter, and during your interview.

The circumstances demanding critical thinking vary from industry to industry. Some examples include:

- A triage nurse analyzes the cases at hand and decides the order by which the patients should be treated.
- A plumber evaluates the materials that best would suit a particular job.
- An attorney reviews evidence and devises a strategy to win a case or to decide whether to settle out of court.
- A manager analyzes customer feedback forms and uses this information to develop a customer service training session for employees.

## 2. Importance of Critical Thinking Skills

Critical thinking skills are important because they help businesses run smoothly by solving problems, developing solutions and creating new ideas. Many areas of improvement like process inefficiencies, management or finances can be improved by using critical thought. Because of this, employers value and seek out candidates who have demonstrated strong critical thinking skills.

For example, if you're working in human resources and must resolve a conflict between two employees, you will use critical thinking to understand the nature of the conflict and what action should be taken to resolve it.

### Critical Thinking Examples in Everyday Life

Have you ever been listening to one of your teacher's lessons and thought that it had no relevance to your own life? You're not alone. Just about every student has felt the same way. Sure, you use critical thinking skills in the classroom to solve word problems in math, write essays in English, and create hypotheses in science. But how will you use critical thinking in everyday life?

First, keep in mind that critical thinking is simply a "deliberate thought process." Basically, it means that you are using reason and logic to come to a conclusion about an issue or decision you are tangling with. And clear, sound reasoning is something that will help you every day. To help you make the leap from classroom to real world, here are 3 concrete examples of critical thinking in everyday life.

### Fake News vs. Real News

Take a moment to reflect on your media skills. Do you think you have what it takes to sort out a real news source from a piece of clever advertising?

According to a recent study from Stanford University, a whopping 82% of the teens surveyed could not distinguish between an ad labeled "sponsored content" and a legitimate news story.

Part of the problem may come from schools cutting back on formal instruction of critical thinking skills and an assumption that today's "digital native" teens can automatically tell the difference without practice or instruction.

You are good at lots of things. But, you know, you've practiced those things you're good at. So, how can you practice telling fact from fiction?

One way (outside of school) is to chat with your family and friends about media sources. Find out how they stay informed, and why they choose those outlets. Ask each other routine questions for evaluating sources.

### **Do your Friends Know Everything?**

It's tempting to believe that the world begins and ends with your friends. Don't get me wrong. Friends are definitely important. However, it pays to reflect a little on how a group influences our lives.

To practice critical thinking in everyday life, take a close look at your group of friends. Are there things that are "forbidden" in your social circle? Are you expected to act a certain way, dress a certain way? Think a certain way?

It's natural that when a group defines something as "cool", all the people in the group work to fit into that definition. Regardless of what they individually believe.

The problem is that virtually every situation can be defined in multiple ways. What is "dumb" to one person may be "cool" to another.

Develop your ability to redefine the way you see the world around you. On your own terms.

Find a time when your friend group sees the negative in a situation. Is there a positive way to view it instead? Or at least a way that makes it seem not quite so bad?

You may not be ready to speak up with your independent view. And that's ok. Just practice thinking differently from the group to strengthen your mind.

### **Critical Thinking in the Driver's Seat**

One of the core critical thinking skills you need every day is the ability to examine the implications and consequences of a belief or action. In its deepest form, this ability can help you form your own set of beliefs in everything from climate change to religion.

But this skill can also save your life (and your car insurance rate) behind the wheel.

Imagine you are cruising down the freeway when your phone alerts you to an incoming text message. The ability to examine your potential actions and their accompanying consequences will help you make the best choice for how to handle the situation.

Do you look at the text and risk getting into an accident? Do you wait and risk not responding to an urgent matter? Or do you pull over to look at the text and risk being late for your appointment?

The same skill can be applied when you are looking for a place to park, when to pull onto a busy street, or whether to run the yellow light.

Better yet, the more practiced you are at looking at the implications of your driving habits, the faster you can make split second decisions behind the wheel.

The process of becoming a better critical thinker also allows the process of personal growth to accelerate. When you start getting a better and more objective viewpoint, **you start to see where you, yourself can improve and grow.**

When the following examples are applied into your everyday life, you can begin to really think critically and discover the magic of questioning everything.

The following are examples of where critical thinking affects your everyday life:

**1. Self-reflection**—analyzing your personal shortcomings

- Researching an issue on racial differences and inequality, you start seeing things from other cultural perspectives and begin to see where you hold certain cultural biases.
- Reflecting on your behavior in a certain confrontation with a person, you see things from their perspective and realize that the way you have behaved isn't to your liking.
- After completing a certain task, you reflect on what you have learned and how you could have improved and gained more experience from the situation.

**2. Decision-making**—more informed decision-making

- Reviewing a confrontation with a loved one you start seeing things from their point of view. This takes away your personal emotions and you begin to see the bigger picture. From here you can make a more conscious decision.
- You are asked to advise on building a big factory in a small town near the town's forest. You do research and play out scenarios with the benefits and drawbacks from the perspective of the people of the town, the ecological perspective of the forest and the benefit of the company you are advising for. Once you see all perspectives you can make a more informed and rational decision.

**3. Time utilization analysis**—recognize the value you bring

- You review what actions you take in a day and how long you take to do them. You see that you waste way too much time watching silly shows on TV that don't bring you that much joy. You decide to only watch one good show a day and use that time to learn a new language daily.



Looking at your schedule you break down the impact of each task. You see who this task helps, how it helps and to what extent. With this information, you start focusing and spending more time on the most impactful tasks.

### **Critical Thinking also Matters in College**

- It allows you to form your own opinions and engage with material beyond a superficial level. This is essential to crafting a great essay and having an intelligent discussion with your professors or classmates. **Regurgitating what the textbook says won't get you far.**
- It allows you to craft worthy arguments and back them up. If you plan to go on to graduate school or pursue a PhD., original, critical thought is crucial
- It helps you evaluate your own work. This leads to better grades (who doesn't want those?) and better habits of mind.

Doing college level work without critical is a lot like walking blindfolded: you'll get *somewhere*, but it's unlikely to be the place you desire.

The value of critical thinking doesn't stop with college, however. Once you get out into the real world, critical thinking matters even more. This is because:

- **It allows you to continue to develop intellectually after you graduate.** Progress shouldn't stop after graduation—you should keep learning as much as you can. When you encounter new information, knowing how to think critically will help you evaluate and use it.
- **It helps you make hard decisions.** I've written before about how defining your values helps you make better decisions. Equally important in the decision-making process is the ability to think critically. Critical thinking allows you compare the pros and cons of your available options, showing that you have more options than you might imagine.
- **People can and will manipulate you.** At least, they will if you take everything at face value and allow others to think for you. Just look at ads for the latest fad diet or “miracle” drug—these rely on ignorance and false hope to get people to buy something that is at best useless and at worst harmful. When you evaluate information critically (especially information meant to sell something), you can avoid falling prey to unethical companies and people.
- **It makes you more employable (and better paid).** The best employees not only know how to solve existing problems—they also know how to come up with solutions to

problems no one ever imagined. To get a great job after graduating, you need to be one of those employees, and critical thinking is the key ingredient to solving difficult, novel problems.

### **Critical Thinking Examples in the Workplace**

#### **1. Teamwork**— promoting group problem-solving

As the team leader in your department, you have to come up with a strategy to improve on a specific product. You allow the entire team to list all concerns, recommend a solution and openly yet constructively criticize other solutions. All the while you have someone take notes. At a certain point, you stop the discussion and list all the notes on the board as perspectives and obstacles. You and your team can now create a solution based on all the information given by your team.

#### **2. Adding value**— recognizing and improving your contribution

Your company has an aim to achieve a certain target by the end of the year. You analyze your position in the company and in what way you can contribute to this target. Then, you list all the ways in which your actions help achieve this target and then attribute the impact of each action and to what person or area it is impacting. You think of ways you can do more of the most impacting action, increase the impact or do something else within your position to make more impact on reaching this target.

### **Critical Thinking Examples in the History of the World**

#### **1. Albert Einstein**

Albert Einstein was faced with great opposition when he questioned the current beliefs of certain scientific principles of his time. Einstein used critical thinking to challenge and debunk these principles and create more useful ones of his own.

ONE OF [EINSTEIN'S] GREATEST INTELLECTUAL GIFTS, IN SMALL MATTERS AS WELL AS GREAT, WAS TO STRIP OFF THE IRRELEVANT FRILLS FROM A PROBLEM.

– C.P. SNOW

#### **2. Charles Darwin**

Charles Darwin was able to come up with his theories by making connections between certain situations. He used a critical thinking mindset to link seemingly unrelated parts of information.

His theory of evolution was a perfect case of questioning and connecting the aspects of his field of study to others.

### **3. Martin Luther King Jr.**

Martin Luther King Jr. inspired millions with his speech “I have a dream”. He used the ability of critical thinking to structure his arguments and present his point of view.

### **4. Sir Isaac Newton**

Sir Isaac Newton researched, applied, revised, and tested everything he learned thoroughly. This sequence of learning is a great example of a critical thinking mindset. There are probably thousands of critical thinking examples in your life where you have applied critical thinking to either solving a problem, creating a new perspective, or presenting yourself in a clear and relevant way.

A soccer coach working during halftime on new tactics for attacking the weaknesses of the other team when the match resumes.

Parents anticipating the costs of sending their young child to college, analyzing the family’s projected income, and budgeting projected household expenses in an effort to put aside some money for that child’s future education.

## **Other Critical Thinking Skills in Everyday Life**

### **Evaluating Online Information**

Fake news, Twitter bots, altered images – how can we filter the noise and find truth? With increased access to information comes an increased need for critical thinking skills. As citizens, consumers, and workers, students need to answer questions like:

- Who published this?
- Why did they make it?
- What are their sources?
- What are their intentions?
- Are they representing themselves or another interest?

Even when we do find sources that we consider credible and reliable, the increasing popularity of “native advertising” or “sponsored content” can leave trusting readers tricked into reading a brand’s pitch as objective editorial content.

### **Making Purchase Decisions**

Fifteen years ago, buying boots was easy. I went to the mall, looked at the mannequins, found a pair I liked, tried them on, and made the purchase. The boots lasted for a few years.

Last year, it was a bit different. I saw a Facebook post from a friend wearing nice boots, and messaged him to ask for the brand. Then, I searched Google for reviews, searched Amazon for more reviews, and decided to buy. These boots are made so well, they may last me for life.

This scenario captures the critical thinking now required for savvy consumers. Built into each purchase are questions like:

- Which review sites, forums, and blogs offer insight into the brands that provide the best value?
- Is it worth buying expensive products that are made of better material? How about budgeting money to justify a hefty purchase?
- And with all those reviews available, how do we sift through the positives and negatives to come to the best decision?

With so much information available online, it takes critical thinking to sort through it all.

### **Caring for Your Health**

Have you ever searched for "Is \_\_\_\_\_ healthy?" The many available studies, often contradictory, are baffling. Online reading can leave us less certain about what to do than before we tried to inform ourselves.

As adults, every year it seems like a different diet becomes popular. Whether it's Whole 30, Keto, Gluten Free, or something else, choosing the diet that's best for your lifestyle requires critical thinking: weighing the benefits, cost, convenience, and drawbacks.

And exercise is certainly not easier. To begin, we need to ask ourselves about our goals. Which routine will help us achieve our goals? And then, after trying a system for few weeks, what are the results? We combine the information we knew going into the program with our current progress to make a decision about if and how to move forward with the plan. This looks a lot like critical thinking to me.

### **Choosing a Career Path**

College or no college? Online courses from home? Part-time work? Startup, non-profit, or corporation? There are benefits and drawbacks to each of these options.

Choosing a career takes time. In a way, we must formulate an argument for each potential option. We must consider the context of financial, social, and professional life. We must ask ourselves: Why is *this* the right option for me?

After settling on a choice, we must project the impact of that decision one, five, and ten years into the future. And that's *before* we inevitably encounter a point where we may decide to adjust career paths. It all takes some critical thinking to make the right career choice.

### 3. Skills for Critical Thinking

#### The Critical Thinking Process

You should be aware that none of us think critically all the time.

Sometimes we think in almost any way but critically, for example when our self-control is affected by anger, grief or joy or when we are feeling just plain 'bloody minded'.

On the other hand, the good news is that, since our critical thinking ability varies according to our current mindset, most of the time we can learn to improve our critical thinking ability by developing certain routine activities and applying them to all problems that present themselves.

Once you understand the theory of critical thinking, improving your critical thinking skills takes persistence and practice.

Try this simple exercise to help you to start thinking critically.

Think of something that someone has recently told you. Then ask yourself the following questions:

1. Who said it?

Someone you know? Someone in a position of authority or power? Does it matter who told you this?

2. What did they say?

Did they give facts or opinions? Did they provide all the facts? Did they leave anything out?

3. Where did they say it?

Was it in public or in private? Did other people have a chance to respond and provide an alternative account?

4. When did they say it?

Was it before, during or after an important event? Is timing important?

5. Why did they say it?

Did they explain the reasoning behind their opinion? Were they trying to make someone look good or bad?

6. How did they say it?

Were they happy or sad, angry or indifferent? Did they write it or say it? Could you understand what was said?

The **skills** that we need in order to be able to think critically are varied and include observation, analysis, interpretation, reflection, evaluation, inference, explanation, problem solving, and decision making.

Specifically we need to be able to:

- Think about a topic or issue in an objective and critical way.
- Identify the different arguments there are in relation to a particular issue.
- Evaluate a point of view to determine how strong or valid it is.
- Recognize any weaknesses or negative points that there are in the evidence or argument.
- Notice what implications there might be behind a statement or argument.
- Provide structured reasoning and support for an argument that we wish to make.

### **Top Seven Critical Thinking Skills**

#### **1. Analytical**

Once a problem has been identified, analysis skills become essential. The ability to analyze the situation includes knowing what facts, data or information about the problem are important. You will also find analysis is an essential skill to eventually solving the problem.

Part of critical thinking is the ability to carefully examine something, whether it is a problem, a set of data, or a text. People with analytical skills can examine information, and then understand what it means, and what it represents.

- |                               |  |
|-------------------------------|--|
| • Asking thoughtful questions | • Questioning evidence                     |
| • Data analysis               | • Recognizing differences and similarities |
| • Information seeking         | • Skepticism                               |
| • Interpretation              |  |
| • Judgment                    |  |

#### **2. Communication**

Communication skills are important when it comes time to explain and discuss issues and their possible solutions with colleagues and other stakeholders. Communication is an important skill to have and improve on for many purposes at work including critical thinking.

Often, you will need to share your conclusions with your employers or with a group of colleagues. You need to be able to communicate with others to share your ideas effectively. You

might also need to engage in critical thinking with a group. In this case, you will need to work with others and communicate effectively to figure out solutions to complex problems.

- Asking important questions
- Assessment
- Collaboration
- Explanation
- Expressing opinions and ideas
- Interpersonal
- Presentation
- Teamwork
- Verbal communication
- Written communication

### **3. Creativity**

Critical thinking often involves some level of creativity. You might need to spot patterns in the information you are looking at or come up with a solution that no one else has thought of before.

All of this involves a creative eye.

- Cognitive flexibility
- Conceptualization
- Curiosity
- Imagination
- Making abstract connections
- Making inferences
- Predicting
- Synthesizing
- Visionary

### **4. Open-Minded**

To think critically, you need to be able to put aside any assumptions or judgments and merely analyze the information you receive. You need to be objective, evaluating ideas without bias.

- Embracing different cultural perspectives
- Fair
- Humble
- Inclusive
- Objective
- Observation
- Reflection

### **5. Problem Solving**

After you've identified a problem, analyzed it and discussed possible solutions, the final step is to execute the solution. Problem solving often requires critical thinking to implement the best solution and understand whether or not the solution is working as it relates to the goal.

Problem solving is another crucial critical thinking skill that involves analyzing a problem, generating and implementing a solution, and assessing the success of the plan. After all, employers don't simply want employees who can think about information critically. They also need to be able to come up with practical solutions.



- Applying standards
- Attention to detail
- Clarification
- Collaboration
- Decision making
- Evaluation
- Grounded
- Identifying patterns
- Innovative
- Logical reasoning

### 6. Observation

Observational skills are the starting point for critical thinking. Employees who are observant can quickly sense and identify a new problem. Those skilled in observation are also capable of understanding why something might be a problem, and may even be able to predict when a problem might occur before it happens based on their experience.

### 7. Inference

Inference is a skill that involves drawing conclusions about the information you collect and may require you to possess technical or industry-specific knowledge or experience. When you infer information about a situation, that means you are developing answers based on limited information. For example, a car mechanic may need to utilize inference skills to determine what is causing a car's engine to stall at seemingly random times.

## Critical Thinking Skills

Scheffer and Rubenfeld discuss critical thinking habits and critical thinking skills. For each of the critical thinking skills shown below, they give a number of activity statements.

- 1. Analyzing**
  - Separating or breaking a whole into parts to discover their nature, functional and relationships.
  - "I studied it piece by piece"
  - "I sorted things out"
- 2. Applying Standards**
  - Judging according to established personal, professional, or social rules or criteria.
  - "I judged it according to..."
- 3. Discriminating**
  - Recognizing differences and similarities among things or situations and distinguishing carefully as to category or rank.

**4. Information Seeking**

- "I rank ordered the various..."
- "I grouped things together"
- Searching for evidence, facts, or knowledge by identifying relevant sources and gathering objective, subjective, historical, and current data from those sources
- "I knew I needed to lookup/study..."
- "I kept searching for data."

**5. Logical Reasoning**

- Drawing inferences or conclusions that are supported in or justified by evidence
- "I deduced from the information that..."
- "My rationale for the conclusion was..."

**6. Predicting**

- Envisioning a plan and its consequences
- "I envisioned the outcome would be..."
- "I was prepared for..."

**7. Transforming Knowledge**

- Changing or converting the condition, nature, form, or function of concepts among contexts
- "I improved on the basics by..."
- "I wondered if that would fit the situation of ..."

## 4. Ways to Improve Critical Thinking Skills

### 1) Ask Basic Questions

*“The world is complicated. But does every problem require a complicated solution?”*

– Stephen J. Dubner

Sometimes an explanation becomes so complex that the original question get lost. To avoid this, continually go back to the basic questions you asked when you set out to solve the problem.

Here are a few key basic question you can ask when approaching any problem:

- What do you already know?
- How do you know that?
- What are you trying to prove, disprove, demonstrated, critique, etc.?
- What are you overlooking?

Some of the most breathtaking solutions to problems are astounding not because of their complexity, but because of their elegant simplicity. Seek the simple solution first.

### 2) Question Basic Assumptions

*“When you assume, you make an ass out of you and me.”*

The above saying holds true when you’re thinking through a problem. it’s quite easy to make an ass of yourself simply by failing to question your basic assumptions.

Some of the greatest innovators in human history were those who simply looked up for a moment and **wondered if one of everyone’s general assumptions was wrong.** From Newton to Einstein to Yitang Zhang, questioning assumptions is where innovation happens.

You don’t even have to be an aspiring Einstein to benefit from questioning your assumptions. That trip you’ve wanted to take? That hobby you’ve wanted to try? That internship you’ve wanted to get? That attractive person in your World Civilizations class you’ve wanted to talk to?

All these things can be a reality if you just **question your assumptions and critically evaluate your beliefs about what’s prudent, appropriate, or possible.**

If you’re looking for some help with this process, then check out Oblique Strategies. It’s a tool that musician Brian Eno and artist Peter Schmidt created to aid creative problem solving. Some of the “cards” are specific to music, but most work for any time you’re stuck on a problem.

### 3) Be Aware of Your Mental Processes

Human thought is amazing, but the speed and automation with which it happens can be a disadvantage when we're trying to think critically. Our brains naturally use heuristics (mental shortcuts) to explain what's happening around us.

This was beneficial to humans when we were hunting large game and fighting off wild animals, but it can be disastrous when we're trying to decide who to vote for.

A critical thinker is aware of their cognitive biases and personal prejudices and how they influence seemingly "objective" decisions and solutions.

All of us have biases in our thinking. Becoming aware of them is what makes critical thinking possible.

### 4) Try Reversing Things

A great way to get "unstuck" on a hard problem is to try reversing things. **It may seem obvious that X causes Y, but what if Y caused X?**

The "chicken and egg problem" a classic example of this. At first, it seems obvious that the chicken had to come first. The chicken lays the egg, after all. But then you quickly realize that the chicken had to come from somewhere, and since chickens come from eggs, the egg must have come first. Or did it?

Even if it turns out that the reverse *isn't* true, considering it can set you on the path to finding a solution.

### 5) Evaluate the Existing Evidence

*"If I have seen further it is by standing on ye sholders of Giants."*

– Isaac Newton

When you're trying to solve a problem, it's always helpful to look at other work that has been done in the same area. There's no reason to start solving a problem from scratch when someone has already laid the groundwork.

It's important, however, to evaluate this information critically, or else you can easily reach the wrong conclusion. Ask the following questions of any evidence you encounter:

- Who gathered this evidence?
- How did they gather it?
- Why?

Take, for example, a study showing the health benefits of a sugary cereal. On paper, the study sounds pretty convincing. That is, until you learn that a sugary cereal company funded it. You can't automatically assume that this invalidates the study's results, but you should certainly **question them** when a conflict of interests is so apparent.

### 6) Remember to Think for Yourself

Don't get so bogged down in research and reading that you forget to **think for yourself**—sometimes this can be your most powerful tool.

Writing about Einstein's paper "On the Electrodynamics of Moving Bodies" (the paper that contained the famous equation  $E=mc^2$ ), C.P. Snow observed that "**it was as if Einstein 'had reached the conclusions by pure thought, unaided, without listening to the opinions of others. To a surprisingly large extent, that is precisely what he had done'**"(121).

Don't be overconfident, but recognize that **thinking for yourself is essential to answering tough questions**. I find this to be true when writing essays—it's so easy to get lost in other people's work that I forget to have my own thoughts. Don't make this mistake.

### 7) Understand That No One Thinks Critically 100% of the Time

*"Critical thinking of any kind is never universal in any individual; everyone is subject to episodes of undisciplined or irrational thought."*

– Michael Scriven and Richard Paul

You can't think critically all the time, and that's okay. Critical thinking is a **tool** that you should deploy when you need to make important decisions or solve difficult problems, but you don't need to think critically about everything.

And even in important matters, you will experience lapses in your reasoning. What matters is that you **recognize these lapses and try to avoid them in the future**.

## Improve your Critical Thinking Skills with these 9 Powerful Tricks

Our lives are nothing but the products of our thoughts and decisions. Therefore, if we increase the quality of what we think, our lives can change for the better. One way to do this is to increase our critical thinking skills. Critical thinking is the process of reasoning so as to analyze an idea. It involves digging deeper into it for the purpose of achieving our full potential in life, in other words, it is the process of thinking better.

If you are disciplined, motivated and ready to grow, here is how to improve your critical thinking skills.

### **1) Do not assume, investigate**

In our day to day lives, we make many assumptions about almost everything. Our brains are designed so as to make these assumptions for the purpose of processing information. Making assumptions is a critical part of the framework of our brains. However, these assumptions could be wrong or inaccurate. Critical thinking requires that we don't make any assumptions. It also demands that any assumptions are deconstructed and examined for relevance and truthfulness. Assumptions can be analyzed by asking 'why?'. Doing this increases our ability to think critically and come up with conclusions of a higher quality.

### **2) Investigate before you accept any information as true**

During our daily activities, we are bombarded with information. It comes from both trustworthy and untrustworthy sources. Therefore, we simply place the information that we get into one of this previous pair of categories. Doing this saves us the time and energy that would be needed to examine the information more closely. Unfortunately, it also makes us accept information as trustworthy while it could be false. Just because something has been published or broadcasted in the media doesn't mean that it is true. Critical thinking demands that we get to the bottom of this information to determine the nature of its validity.

### **3) Question everything**

To think critically, we must be ready to question literally everything. You should question any news you get, the statements made by figures of authority and also what you are taught. Making queries is one of the foundation activities in critical thinking. Firstly, find the questions that you should ask in every situation. Secondly, figure out how to ask these questions in such a way that you get constructive answers. This will definitely improve your critical thinking skills.

### **4) Comprehend your personal biases**

Biases are the conclusions that we make about the world around us based on our own judgement. According to studies, our judgement can sometimes be very misguided, weak and spiteful. It can result in conclusions that are highly inaccurate about other people or things too. If a certain piece of information damages one's self esteem or pricks the ego, then it can be taken negatively or assigned a negative bias even if it is helpful. Therefore, to fully develop your

critical thinking skills, you need to identify out your biases and examine them, this will result in narratives of higher quality.

#### **5) Plan many steps ahead of your peers**

You can think of life as a game of chess. To succeed, you must plan many steps ahead of your opponent. Critical thinking involves this form of thought. It is not enough to think only two or three steps ahead. You should plan and strategize as many steps ahead as possible. Brainstorm a wide variety of futures that your present could take. Doing this helps you to anticipate possible challenges and be prepared for them. Thus, your critical thinking skills improve.

#### **6) Identify your main purpose while you are making decisions**

Whenever we make a decision in life, there is a specific purpose attached to it. There are goals to the decisions that we make. This purpose is very useful as a guideline for one's thoughts and actions. Ensure that your purpose is clear. Put it in words and let it be your starting point. After that, think and make decisions that align with your purpose. In this way, you are able to increase your critical thinking skills.

#### **7) Think about the consequences of your actions**

Every action has an equal and opposite reaction. Our actions are the results of our decisions. It is possible to predict or estimate possible results. One way of doing this is to put ourselves in the shoes of the stakeholders who are going to be affected by them. Examine how they could feel or react in response to our decisions. This helps you to be prepared for any outcome. You are able to create back up plans that cover any eventuality of your decisions.

#### **8) Stay aware of the processes happening in your mind**

The process of human thinking is simply astounding. The brain is one of the most complex structures known to man. We think in many ways. One of these is through heuristics. This is the process of making mental shortcuts so as to process a lot of information really fast. This method is effective when we are engaged in live events such as sports or self-defense. However, heuristics are not reliable from a critical thinking point of view. This is because they browse through information without taking a deeper look. Heuristics are also heavily influenced by biases. Therefore, improve your critical thinking skills by identifying when you are using heuristics to think and switch to more comprehensive thinking.

**9) Look through the evidence of previous chains of thought**

When thinking critically, you do not have to reinvent the wheel. Any problem that you are dealing with or trying to solve has most likely been solved by someone else before you arrived on the scene. To get through it faster and more successfully, simply check to see the results of those who came before you. Use them to guide your decisions and this will indicate better critical thinking skills.