

Module 1 I SEE YOU social entrepreneurship training: **CRITICAL THINKING**

Introduction:

TO BE AN ENTREPRENEUR WITH A FUTURE VIEW

According to Lisa Elder (2004), if you have decided to start your own business you are at an exciting time. Finally you will be able to live your own life, make your own decisions and do exactly what you want. At last!

So the good news is that you now are free to make your own choices. The bad news is that, in this highly complex world, it is all too easy to make decisions, which might lead you in a direction you may regret. With every decision you make, there are choices you accept and choices you reject. With every one you accept, you consequently turn your back on others. How will you know whether you are making the right choices, or the bad ones?

The best way to face all problems and decisions in your life is with a critical view. By this we do not mean that you should improve your ability to criticize (most of us know how to do that all too well). Rather we mean that you should think critically about the problems and opportunities that face you. In other words, you will have to make lots and lots of decisions in your life, from deciding whether to pursue a university degree to choosing a spouse and having children (or deciding not to); and you will want to do the best reasoning that you possibly can with respect to those decisions. In other words, you will want to make decisions that result in positive consequences. But to do this, you must understand some very basic things about critical thinking.

I. WHAT IS CRITICAL THINKING? THE COMPETENCE.

The European Commission, after analyzing the effects and impact of entrepreneurship programs on higher education (EC., 2012), established a categorization of entrepreneurial competences in:

- **Knowledge:** learn to understand entrepreneurship
- **Skills:** learn to do entrepreneurship
- **Attitudes:** learn to become an entrepreneur

Thus, for Project “I SEE YOU” we propose the entrepreneurial training for youth by competences.

There are many different definitions of critical thinking. Here we list some of them:

- Ennis (1989) defines critical thinking as *“reasonable reflective thinking focused on deciding what to believe or do”*.
- *“Critical thinking is that mode of thinking –about any subject, content or problem– in which the thinker improves the quality of his or her thinking by skillfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them”* (Paul, Fisher and Nosich, 1992).
- *“Critical thinking is a skilled and active interpretation and evaluation of observations and communications, information and argumentation”* (Fisher and Scriven, 1997).
- *“Critical thinking is essentially an “active” process – one in which you think things through for yourself, etc., rather than learning in a largely passive way from someone else”* (Fisher, 2001).

Critical thinking is a metacognitive competence. What this means is that it is a higher- level cognitive competence that involves thinking about thinking. We have to be aware of the good principles of reasoning, and be reflective about our own reasoning. In addition, we often need to make a conscious effort to improve ourselves, avoid biases, and maintain objectivity. This is notoriously hard to do. We are all able to think but to think well often requires a long period of training. The mastery of critical thinking is similar to the mastery of many other competences. There are three important components: knowledge, skills and attitude.

a) Knowledge:

If we want to think correctly, we need to follow the correct rules of reasoning. Knowledge of theory includes knowledge of these rules. These are the basic principles of critical thinking, such as the laws of logic, and the methods of scientific reasoning, etc.

Also, it would be useful to know something about what not to do if we want to reason correctly. This means we should have some basic knowledge of the mistakes that people make. First, this requires some knowledge of typical fallacies. Second, psychologists have discovered persistent biases and limitations in human reasoning. An awareness of these empirical findings will alert us to potential problems.

b) Skills:

Critical thinking includes the ability to engage in reflective and independent thinking. And that means anyone with critical thinking skills should be able:

- To understand the logical connections between ideas.
- To identify, construct and evaluate arguments.
- To detect inconsistencies and common mistakes in reasoning
- To solve problems systematically
- To identify the relevance and importance of ideas

- To reflect on the justification of one's own beliefs and values

c) Attitudes:

Good critical thinking skills require not just knowledge and practice. Persistent practice can bring about improvements only if one has the right kind of motivation and attitude. The following attitudes are not uncommon, but they are obstacles to critical thinking:

- I prefer being given the correct answers rather than figuring them out myself.
- I don't like to think a lot about my decisions as I rely only on gut feelings.
- I don't usually review the mistakes I have made.
- I don't like to be criticized.

To improve our thinking we have to recognize that the importance of reflecting on the reasons for belief and action. We should also be willing to engage in debate, break old habits, and deal with linguistic complexities and abstract concepts.

In this way critical thinking is not a matter of accumulating information. A person with a good memory and who knows a lot of facts is not necessarily good at critical thinking. A critical thinker is able to deduce consequences from what he knows, and he knows how to make use of information to solve problems, and to seek relevant sources of information to inform himself.

Critical thinking should not be confused with being argumentative or being critical of other people. Although critical thinking skills can be used in exposing fallacies and bad reasoning, critical thinking can also play an important role in cooperative reasoning and constructive tasks. Critical thinking can help us acquire knowledge, improve our theories, and strengthen arguments. We can use critical thinking to enhance work processes and improve social institutions.

Some people believe that critical thinking hinders creativity because it requires following the rules of logic and rationality, but creativity might require breaking rules. This is a misconception. Critical thinking is quite compatible with thinking "out-of-the-box", challenging consensus and pursuing less popular approaches. If anything, critical thinking is an essential part of creativity because we need critical thinking to evaluate and improve our creative ideas.

II. THE PRACTICE:

1. Asking Critical Thinking Questions.

Merely knowing the principles that distinguish good and bad reasoning is not enough. We

might study in the classroom about how to swim, and learn about the basic theory, such as the fact that one should not breathe under water. But unless we can apply such theoretical knowledge through constant practice, we might not actually be able to swim.

Similarly, to be good at critical thinking skills, it is necessary to internalize the theoretical principles so that we can actually apply them in daily life. There are at least two ways, one is to do lots of good-quality exercises. Exercises include not just exercises in classrooms and tutorials. They also include exercises in the form of discussion and debates with other people in our daily life. The other method is to think more deeply about the principles that we have acquired. In the human mind, memory and understanding are acquired through making connections between ideas.

Critical Thinking is also the art of using reason to analyze ideas and dig deeper to get to our true potential. Critical thinking is not about thinking more or thinking harder; it is about thinking better. Honing your critical thinking skills can open up a lifetime of intellectual curiosity. But the journey is not all rosy. Critical thinking requires a lot of discipline. Staying on track takes a combination of steady growth, motivation, and the ability to take an honest look at yourself, even in the face of some uncomfortable facts.

How to hone Questioning Skills:

A) Question your assumptions. We make a lot of assumptions about almost everything. It is how our brain processes certain pieces of information, and how we get along in everyday life. You could say they are the foundation of our critical framework. But what if those assumptions turned out to be wrong, or at least not entirely truthful? Then the whole foundation needs to be re-built, from the bottom up.

B) Do not take information on authority until you have investigated it yourself. Like assumptions, taking information on authority can be useful. Instead of double-checking everything anyone says, we tend to label information as either coming from a trustworthy or not trustworthy source. This keeps us from double-checking every piece of information that comes our way, saving time and energy. But it also keeps us from getting to the bottom of things we perceive as coming from a trustworthy source, even when they don't. Just because it was published in a magazine or broadcast over TV doesn't mean it's necessarily true.

- Get in the habit of using your instinct to investigate questionable pieces of information. If your gut isn't satisfied with an explanation, ask the person to elaborate. If you don't question a fact, read about it or test it yourself. Soon enough,

you'll build up a pretty good sense of what deserves more research and what you've determined to be true in your own judgment.

- C) Question things.** You have already read about questioning assumptions and questioning authority figures. Now you're about to be told to question...everything? Asking questions is perhaps the quintessential act of critical thinking. If you don't know what questions to ask, or don't ask the questions in the first place, you may as well not get the answer. Finding the answer, and finding it elegantly, is what critical thinking is all about.
- D) Put yourself in other peoples' shoes.** Empathy can also help you develop your critical thinking skills. Whether it is improving your negotiation tactics or understanding literature better, putting yourself in the shoes of others will help you imagine their motivations, aspirations, and turmoil. You can use this information to get leverage, be persuasive, or just plain be a better person. Empathy does not need to be heartless.
- E) Understand all your options.** When you want to use your critical thinking skills to act — because armchair philosophy can get old after too long — it helps to know what your options are. Lay them all out there, and then weigh the options. We often pigeonhole ourselves into believing that we are stuck with only one option, when other options. End of sentence is missing?
- F) Fail until you succeed.** Be fearless in the face of failure. Failure is just another way of figuring out what does not work. Use failure to your advantage by learning from your lessons. The popular myth out there is that successful people never fail, when the truth is that successful people fail until they succeed, at which point their success is the only thing that is visible

2. Methodological Believing and Casual Reasoning

Methodological belief and doubt are systematic tools that help us to see from perspectives we may not have seen from otherwise. They help us see things we easily could have missed.

Who is it for? These tools can be used by anyone wanting to understand other perspectives quickly or when you want your perspective to be better understood by others.

Why use this method? To potentially gain new perspectives quickly without having to make a personal investment.

Methodological doubt is the systematic, disciplined, and conscious attempt to criticize everything no matter how compelling it might seem—to find flaws or contradictions we

might otherwise miss. This means not just listening but actually trying to believe. Thinking is not trustworthy unless it also includes methodological belief: the equally systematic, disciplined, and conscious attempt to believe everything no matter how unlikely or repellent it might seem—to find virtues or strengths we might otherwise miss. Not just refrain from quarreling against an idea; we must try to believe it.

Both processes derive their power from the very fact that they are methodological: artificial, systematic, and disciplined uses of the mind. As methods, they help us see what we would miss if we only used our minds naturally or spontaneously. We tend to assume that the ability to criticize a claim we disagree with counts as more serious intellectual work than the ability to enter into it and temporarily assent. When we doubt, we split out or fend off; when we believe we swallow or incorporate. To doubt well, we learn to extricate or detach ourselves; to believe well we learn to invest or insert ourselves.

Using the 5-minute rule is a particularly easy way to try out methodological belief. For 5 minutes, allow no criticism of the idea, and everyone should try to believe it. These questions can help:

- What is interesting or helpful about the view? What are some intriguing features that others might not have noticed?
- What would you notice if you believed this view?
- How would the world work differently if this were true?
- Under what conditions might this idea actually be true?

People who cannot answer such questions need to be quiet and listen to those who can. You will begin to notice how you experience more of a cognitive shift or enlargement of perspective in this procedure than experienced by simply 'understanding' the problematic views (Elbow, 1986).

The human mind, without discipline and rigor, is prone to shoddy thinking. Oddly enough, very often it would rather not have to "think." Instead it is frequently impulsive, preferring to go with its first response to a situation or problem rather than probing into the complexities of issues. However, although it is non-reflective by nature, it is fully capable of transforming and improving the way it operates. This fact is a mystery to most people because such thinking involves intellectual discipline; and in our culture disciplined thinking is, for the most part, neither understood nor valued.

But we can learn to take charge of our thinking, to monitor and assess the moves our mind makes if we see the value in doing it, and are willing to consistently practice at it. Despite the fact that becoming highly skilled at good reasoning involves a long, slow process, the

basic intellectual moves that the mind must make to do so are assessable to you.

By learning these moves, you can learn to approach any decision or problem solving with a critical eye. You can learn take charge of your thinking so that you are not simply doing what is said or advised to you to take forward your idea or business, but continually asking yourself how what you are told and what you are supposed to do, relates to the issues in your life in a meaningful way. In other words, you can use the information you learn anywhere to do better reasoning if you learn to approach the content through good reasoning.

To illustrate what we mean, while introducing you to some of the most basic moves the mind must make if it is to do good reasoning, we will focus on an everyday problem that you might face in your life. However, to make the most of this training course, you should apply the same ideas to, and be able to make the same intellectual moves all the time in the program.

III. THE EXAMPLE OF A FUNDAMENTAL CRITICAL THINKING USE

If you are thinking critically, or reasoning well, about a problem in your life or in your professional career, you will begin by determining the precise question you are trying to answer. To a large extent, the quality of your reasoning about any problem will be determined by how well you are able to frame the question that ultimately drives your thinking. Let's say, for example: I am planning to purchase car. My reasoning will be very different if I begin with the question, "What type of car do I want to buy?", than if I begin with the question, "Given my limited available finances and my plans to save money to create my own business, what is the best car purchase I can make?" The first question is unclear, and thus can be interpreted in a number of ways. It does not help to direct my thinking along a clear path. Furthermore, the way the question is put implies that I can "have" any car I "want." On the other hand, the second question is much more precise, and because it narrows the possibilities (due to my limited finances), it serves as a much better guide for my thinking.

The next step in the process of thinking through a problem is to ask: what is my purpose in answering this question? My purpose works hand in hand with my question to guide my thinking. Let us say that my purpose is to purchase a car that is dependable, safe, and inexpensive, which I will use primarily to drive to my business each day. Now I have a clear question and a clear purpose, together which tell me the type of information I must have to answer the question. Now, obviously I will ultimately have to make a decision between this car or that, so that the process of thinking critically about an issue does not tell me exactly

which car to purchase. Rather, it guides me to the best possible choices.

So now I know that I need to gather information about dependability, safety and cost. Perhaps I should begin by reading consumer reports for information related to all three of these. I will then need to shop around to find the best buy for the money. If I am considering purchasing a used car I should look at the car's maintenance records to see if it has been well cared for (to help determine potential reliability). If I will have a long distance to drive each day, I should consider purchasing only a car that will be reliable traveling long distances. In that case perhaps I should only consider cars that have very low mileage. I might look at any statistics I can gather from automobile companies about the safety of their vehicles.

Once I have gathered the information I need, I will be aware that there is usually more than one way to interpret it. I want to consider only accurate or logical interpretations of information. Statistics are often presented in ways that are misleading, or result in our interpreting information incorrectly. Automobile companies exist for one reason, and that is to make money. Therefore I will guard against simply believing the information they present (and their interpretation of the information) without wondering if there is possibly some other way to interpret it. If I am told, for example, that a particular car is the safest car in the industry (interpretation), based on the fact that fewer people are known to have accidents in this car than in any other car (information), I will question why the accident rate for this car is so low. Perhaps it is that the average person who purchases this type of car is more likely to be a safer driver (perhaps because she is older and more highly educated), rather than that the car itself is safer than other cars on the market.

Furthermore, when I am gathering information I want to make sure I am only considering information that is relevant to the question I am focused on. Therefore I avoid gathering information about cars that are out of my price range, which I know to be unsafe, and which I am relatively certain are undependable. I determine what information is relevant by keeping my question and purpose in clear view.

To summarize, when making a decision or solving a problem, you should begin with a clear, precise question and purpose which directly relate to the problem. Then you should gather only accurate information, which is relevant to the particular problem you are trying to solve. You should figure out if there are alternate ways to interpret a piece of information, continually questioning the way others interpret information or present "facts."

If you learn to ask these questions as a habit of mind, the decisions you make will be much better, and the consequences more positive than if you respond to problems in an

undisciplined, non-reflective, impulsive way. If you learn to ask these questions, you will be able to approach the content of your training through reasoning, rather than through memorization. Thus, in class, at any given point, you should be able to ask yourself, "What is the key question right now? What information do I need to address the question? How can I make sure the information is relevant and accurate? Is there another way to interpret the information than the instructor or textbook is presenting. How does this content relate to my life and business idea in a significant way?"

If you are really interested in becoming a critical thinker, you should understand that developing your mind involves a deliberate, disciplined, committed process, but that its benefits far outweigh its costs.

WHY IS CRITICAL THINKING IMPORTANT TO ENTREPRENEURS?

- **Critical thinking is a domain-general thinking skill.** The ability to think clearly and rationally is important whatever we choose to do. If you work in education, research, finance, management or the legal profession, then critical thinking is obviously important. But critical thinking skills are not restricted to a particular subject area. Being able to think well and solve problems systematically is an asset for any career.

- **Critical thinking is very important in the new knowledge economy.** The global knowledge economy is driven by information and technology. One has to be able to deal with changes quickly and effectively. The new economy places increasing demands on flexible intellectual skills, and the ability to analyze information and integrate diverse sources of knowledge in solving problems. Good critical thinking promotes such thinking skills, and is very important in the fast-changing workplace.

- **Critical thinking enhances language and presentation skills.** Thinking clearly and systematically can improve the way we express our ideas. In learning how to analyze the logical structure of texts, critical thinking also improves comprehension abilities.

- **Critical thinking promotes creativity.** To come up with a creative solution to a problem involves not just having new ideas. It must also be the case that the new ideas being generated are useful and relevant to the task at hand. Critical thinking plays a crucial role in evaluating new ideas, selecting the best ones and modifying them if necessary.

- **Critical thinking is crucial for self-reflection.** In order to live a meaningful life and to structure our lives accordingly, we need to justify and reflect on our values and decisions. Critical thinking provides the tools for this process of self-evaluation.

- **Good critical thinking is the foundation of science and democracy.** Science requires

the critical use of reason in experimentation and theory confirmation. The proper functioning of a liberal democracy requires citizens who can think critically about social issues to inform their judgments about proper governance and to overcome biases and prejudice.

WHAT HAVE YOU LEARNED?

(Self-evaluation) Get a pen and read to reveal the questions. There is no time limit but it should not take more than a few minutes.

A bat and a ball cost 1.10€ in total. The bat costs 1.00€ more than the ball. How much does the ball cost?

If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets?

In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?

When you are done, here are the answers:

The answers are: 0.05€, 5 mins, and 47 days.

What is interesting about this test is that each question has an "intuitive" answer which is actually wrong. To get all questions right, most people would need to suppress their immediate reactions and reflect carefully to come to the correct answers. This is supposed to reflect the capacity for deliberate and reflective reasoning and to avoid jumping to conclusions. Researchers claim that the short test actually provides a rather good measurement of rational thinking and cognitive ability.

Don't worry if you did not get the answers right. What is important is to realize that **in some situations, spending more time thinking about the question is better than coming up with an answer very quickly**