Dire Dawa Management and Kaizen Institute

Critical thinking and Decisions Making

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INTRODUCTION

The purpose of this manual is to provide an insight about critical thinking for quality Decisions making &problem solving for government and non-government officials. Critical thinking is one of the most essential **soft skills a person** can develop over their lifetime. In most occasions, officials come across different routine Decisions that will hamper or promote the success of an organization due to technical capacity of critical thinking. Accordingly, this training manual is prepared to provide technical details for officials how to manner critical thinking as a habitual action for improved Decisions making &problem solving. The word "critical" can mean different things in different contexts. For example, it can refer to the importance of something, or can also mean pointing out the negative aspects of something, i.e. to criticize something.

Critical thinking at university does not mean looking only for the most important aspects of a topic or just criticizing ideas. It is also about not accepting what you read or hear at face value, but always questioning the information, ideas and arguments you find in your studies. This involves identifying and analyzing arguments and truth claims, discovering and overcoming prejudices and biases, developing your own reasons and arguments in favor of what you believe, considering objections. 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 enhances language and presentation skills. Thinking clearly and systematically can improve the way we express our ideas. In learning how to analyses the logical structure of texts, critical thinking also improves comprehension abilities.

Time frame: 1-2 days

i. General objective

The general objective of the manual is to upgrade the participant's knowledge, technical skill required to successfully carryout critical thinking, problem solving & decision making.

ii. Specific objectives

As the end of the program participants should be able to:

- ✓ Perceive that quality of life are largely depends on the quality of decisions &problem solving capacity
- ✓ Understand the basic concepts critical thinking for decision making &problem solving
- ✓ Understanding the knowledge about problem solving through critical thinking
- ✓ Understanding the basic techniques for analyzing critical thinking like fish bone ***di***agram

Tanning methodology

- ✓ Individual Reading
- ✓ Lecture
- ✓ Reflection ,case study &Group work

SECTION ONE

AN OVER VIEW OF CRITICAL THINKING

1. AN OVER VIEW OF CRITICAL THINKING

1.1. WHAT IS THINKING?

Thinking can refer to the act of producing thoughts or the process of producing thoughts. In spite of the fact that thought is a fundamental human activity familiar to everyone, there is no generally accepted agreement as to what thought is or how it is created. The process of using your mind to consider something carefully. Thinking is the activity of using your brain by considering a problem or possibility or creating an idea. Thinking allows humans to make sense of, interpret, represent or model the world they experience, and to make predictions about that world. It is therefore helpful to an organism with needs, objectives, and desires as it makes plans or otherwise attempts to accomplish those goals.

But what is thinking? And if thinking is the special skill that sets us apart from other animals, why is it that we all think differently? Why is it, for example, that when presented with the same facts, circumstances and information, one person will draw one conclusion while another might conclude something altogether different?

1.2 Concept & Definitions of Critical Thinking

What is critical thinking? Is disciplined thinking that is governed by clear intellectual standards? 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.

What is critical thinking? It refers to the ability to analyze information objectively and make a reasoned decision. 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

The word "critical" can mean different things in different contexts. For example, it can refer to the importance of something, or can also mean pointing out the negative aspects of something, i.e. to criticize something.

However, critical thinking at university does not mean looking only for the most important aspects of a topic or just criticizing ideas. It is also about not accepting what you read or hear at face value, but always questioning the information, ideas and arguments you find in your studies.

This involves identifying and analyzing arguments and truth claims, discovering and overcoming prejudices and biases, developing your own reasons and arguments in favor of what you believe, considering objections. 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 enhances language and presentation skills. Thinking clearly and systematically can improve the way we express our ideas. In learning how to analyses the logical structure of texts, critical thinking also improves comprehension abilities.

Critical thinking is self-guided, self-disciplined thinking which attempts to reason at the highest level of quality in a fair-minded way. People who think critically consistently attempt to live rationally, reasonably, empathically.

Everyone thinks; it is our nature to do so. But much of our thinking, left to itself, is biased, distorted, partial, uninformed or down-right prejudiced. Yet the quality of our life and that of what we produce, make, or build depends precisely on the quality of our thought. Low thinking is costly, both in money and in quality of life. Excellence in thought.

Critical thinking is the analysis of an issue or situation and the facts, data or evidence related to it. Ideally, critical thinking is to be done objectively—meaning without influence from personal feelings, opinions or biases—and it focuses solely on factual information.

The Foundation for Critical Thinking offers this definition:

- ✓ "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."
- ✓ Critical thinking is "reasonable, reflective thinking that is focused on deciding what to believe or do." (3)
- ✓ Or, a catchy way of defining critical thinking is "deciding what's true and what you should do."
- ✓ But my favorite uber-simple definition is that critical thinking is simply "thinking about thinking."

Our human brains are imperfect and susceptible to irrationality, distortions, prejudices, and cognitive biases.

1.3 Types of thinking

- ➢ *Divergent thinking*: The term "divergent thinking" refers to that strategy of solving problems characterized by the proposal of a multiplicity of possible solutions in an attempt to determine the one that works. Think about a brainstorming session, where you sit down to discuss what company problem needs to be solved next. People are throwing out all sorts of suggestions—even ones you know at first glance are unfeasible. That's divergent thinking. You're contributing ideas without any rules or restrictions. Divergent thinking is the process of thinking that explores multiple possible solutions in order to generate creative ideas.
- ➢ *Convergent thinking:* It is the process of taking a lot of ideas and sorting them, evaluating them, analyzing the pros and cons, and making decisions," Manning explains. Convergent thinking is a term coined by Joy Paul Guilford as the opposite of divergent thinking. It generally means the ability to give the "correct" answer to standard questions that do not require significant creativity, for instance in most tasks in school and on standardized multiple-choice tests for intelligence. Convergent thinking is a problem solving technique

involving the bringing together different ideas from different participants or fields to determine a single best solution to a logically defined problem. Convergent and Divergent thinking are like two sides of a coin. They are completely in contrast with each other yet extremely important in our daily lives.

- *Abstract Thinking*: Abstract thinking is what sets us apart from most animals. Abstract thinking is when someone can think about things that aren't physically in front of them. They can read body language and know the difference between verbal and nonverbal.
- *Concrete thinking*: Concrete thinking focuses on what is physically around you. Concrete thinkers see a physical object and just think of what's in front of them. Most animals are concrete thinkers. They see an object in front of them, and when it's gone, they usually don't think anything of it. A concrete thinker may take words literally. If someone tells them to break a leg, they may wonder why they should snap their leg bones in two. If someone tells them it's raining cats and dogs, they may wonder why they can't hear a cacophony of barks and meows outside.
- *Analytical Thinking*: Thinking that allows you to break down complex problems into single and manageable components. Analytical thinking describes a thinking style that enables a person to break down complex information or a series of comprehensive data. It uses a step-by-step method to analyze a problem and then come to an answer or solution. An example of analytical thinking involves understanding the relationship between leaves and the color green. One could ask "Why are leaves green?" and then use analytical thinking skills to tie the answer together.
- *Strategic thinking:* s defined as a mental or thinking process applied by an individual in the context of achieving a goal or set of goals. Strategic thinking is a process that defines the manner in which people think about, assess, view, and create the future for themselves and others.

1.4 Critical thinking approach

How to Think Critically and Problem Solve?

We are thinking critically in a problem solving Mindset when we approach:

1. Critical questions :things to think about when someone has something to say

- ✓ Who said it?
- ✓ What did say
  - Did they say opinion or facts
- ✓ Where did they say it?
  - Was it in public or private
- ✓ When did they say it?
  - Before ,after or during an important event
- ✓ Why did they say it?
  - Look good or bad
- ✓ How did they say it?
  - Were they happy or sad or angry or didn't

2. Steps for formal critical thinking approach

Step 1: Knowledge/ statement of the problem/ Formulate your question

For every problem, clear vision puts us on the right path to solve it. This step identifies the argument or the problem that needs to be solved. Questions should be asked to acquire a deep understanding about the problem. In some cases, there is no actual problem, thus no need to move forward with other steps in the critical thinking model. The questions in this stage should be open-ended to allow the chance to discuss and explore main reasons. At this stage, two main questions need to be addressed: What is the problem? And why do we need to solve it?

Step 2: Comprehension/gathering of information

Once the problem is identified, the next step is to understand the situation and the facts aligned with it. The data is collected about the problem using any of the methods that can be adopted depending on the problem, the type of the data available, and the deadline required to solve it

Step 3: Application/ Apply the information

This step continues the previous one to complete the understanding of different facts and resources required to solve the problem by building a linkage between the information and resources. Mind maps can be used to analyze the situation, build a relation between it and the core problem, and determine the best way to move forward.

Step 4: Analyze

Once the information is collected and linkages are built between it the main problems, the situation is analyzed in order to identify the situation, the strong points, the weak points, and the challenges faced while solving the problem. The priorities are set for the main causes and determine how they can be addressed in the solution. One of the commonly used tools that can be deployed to analyze the problem and the circumstances around it is the cause effect diagram, which divides the problem from its causes and aims to identify the different causes and categorize them based on their type and impact on the problem.

Step 5: Synthesis

In this stage, once the problem is fully analyzed and all the related information is considered, a decision should be formed about how to solve the problem and the initial routes to follow to take this decision into action. If there are number of solutions, they should be evaluated and prioritized in order to find the most advantageous solution. One of the tools that contribute choosing the problem solution is the SWOT analysis that tends to identify the solution's strength, weakness, opportunity, and threats with respect to organization.

Step 6: Take Action

The final step is to build an evaluation about the problem that can be put into action. The result of critical thinking should be transferred into action steps. If the decision involves a specific project or team, a plan of action could be implemented to ensure that the solution is adopted and executed as planned.

The critical thinking method can be adopted to replace emotions and personal biases when trying to think about a situation or a problem. The time for adopting critical thinking varies based on the problem; it may take few minutes to number of days. The advantage of deploying critical thinking is that it contributes to widening our perspectives about situations and broadening our thinking possibilities. However, these steps should be translated into a plan of action that ensures that the decided resolution is well achieved and integrated between all the involved bodies

1.5 FISHBONE DIAGRAM or Cause and Effect Analysis

A fishbone diagram, also called a cause and effect diagram or Ishikawa diagram, is a visualization tool for categorizing the potential causes of a problem in order to identify its root causes. A cause and effect diagram is a tool that helps you do this. The 'effect' is the problem you are working on.

These are the best and most common practices when creating cause and effect diagrams. The fishbone diagram identifies many possible causes for an effect or problem. Cause and Effect Analysis was devised by Professor Kaoru Ishikawa, a pioneer of quality management, in the 1960s. The technique was then published in his 1990 book, "Introduction to Quality Control."

- Identify the problem. Define the process or issue to be examined.
- Brainstorm. Discuss all possible causes and group them into categories.
- Draw the backbone. Once the topic is identified, draw a straight, horizontal line (this is called the spine or backbone) on the page, and on the right side, draw a rectangle at the end. Write a brief description of the problem in the rectangle.
- Add causes and effects. Causes are added with lines branching off from the main backbone at an angle. Write the description of the cause at the end of the branch. These are usually one of the main categories discussed above. Details related to the cause or effect may be added as sub-categories branching off further from the main branch. Continue to add branches and a cause or effect until all factors have been documented. The end result should resemble a fish skeleton.
- Analyze. Once the diagram has been completed, analyze the information as it has been organized in order to come to a solution and create action items

WHEN TO USE A FISHBONE DIAGRAM

- ✓ When identifying possible causes for a problem.

FISHBONE DIAGRAM PROCEDURE

Step 1: Agree on a problem statement (effect). Write it at the center

Define the problem (effect) to be solved. This first step is probably one of the most important tasks in building a cause and effect diagram. While defining your problem or event, your problem statement may also contain information about the location and time of the event. On the cause and effect diagram the problem is visually represented by drawing a horizontal line with a box enclosing the description of the problem on the tip of the arrow.

Take each of the main categories and brainstorm possible causes of the problem. Then, explore each one to identify more specific 'causes of causes'. Continue branching off until every possible cause has been identified. Where a cause is complex, you might break it down into sub-causes. Show these as lines coming off each cause line.

Step 2: Work Out the Major Factors Involved

Identify the major causes of the problems related to people, equipment, materials, external factors, etc. & Make sure that the categories you use are relevant to your particular problem / delay.

Some of the commonly used primary causes (but not limited to) include the 4 M's of manufacturing (machine, method, material and manpower); the 4 S's of the service sector (surroundings, suppliers, systems, and skills); the 5 M's (measurement, maintenance, money, management, and Mother Nature); and the 8 P's (product, price, place, promotion, people, process, physical environment, and productivity). Other appropriate primary causes include service, quality, technology, consumables, work processes, environment, service level, etc.

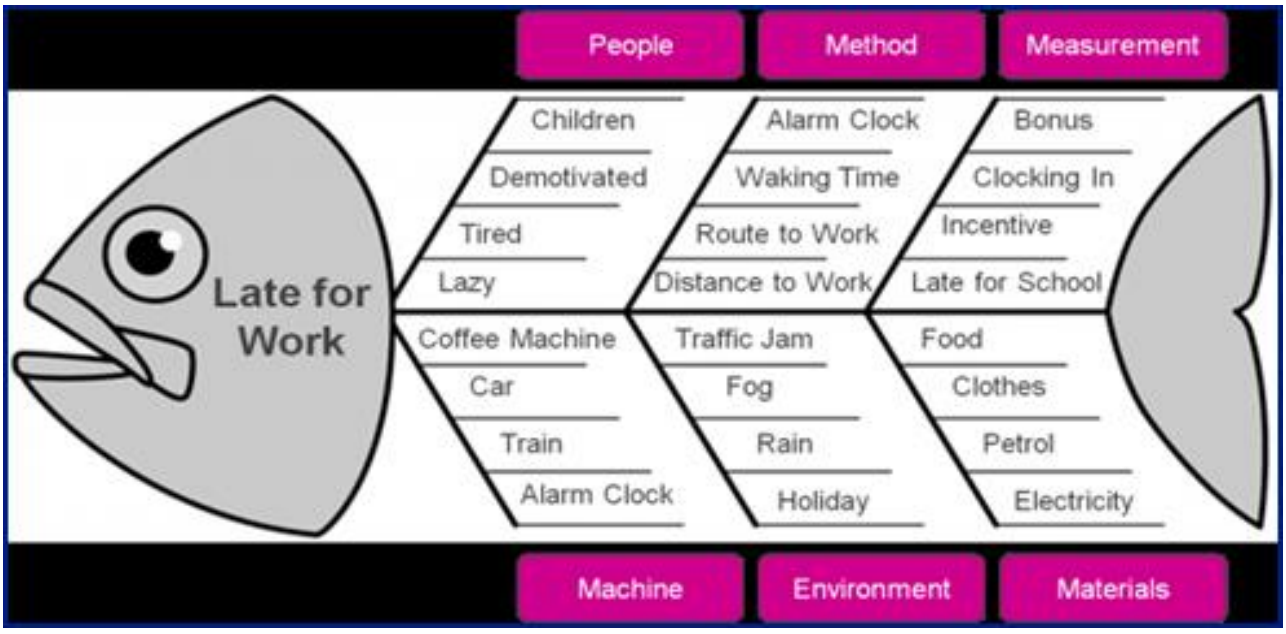
Step 3: Brainstorm

Identify the key causes of the problem or event. In this step, the primary causes of the problem are drilled down by using brainstorming techniques. All the possible causes of the problem. Ask

“Why does this happen Now, for each of the factors you considered in step 2, brainstorm possible causes of the problem that may be related to the factor. Again ask “Why does this happen?” about each cause. Write sub-causes branching off the causes. Continue to ask “Why?” and generate deeper levels of causes. Layers of branches indicate causal relationships.

Identify the reasons behind the key causes. The goal in this step is to brainstorm as many causes for each of the key causes. Your team to drill down to these sub-causes? To facilitate participation from all of your team members, ask each member of the group to provide one reason behind a key cause. These suggestions should be written down and connected to their appropriate key cause arrow. Remember that these reasons are free- flowing, form logical patterns, and are inter-connected to a key cause.

Identify at least four “causes” that contribute to the problem. Connect these four causes with arrows to the spine. These will create the first bones of the fish.



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Step 4: Analyze Your Diagram

Analyze your diagram. By this stage you should have a diagram showing all the possible causes of your delay / problem. Depending on the complexity and importance of the problem, you can now investigate the most likely causes further. This may involve setting up interviews carrying out process mapping or surveys which you can use to decide whether the causes identified are correct.

Identify the most likely causes. At the end of step two, your team should have a good overview of the possible causes for the problem or event; if there are areas in the chart where possible causes are few, see if your team can dig deeper to find more potential causes. The team then should focus more specifically on the potential cause(s) that have a high probability of taking place. It is not unusual for teams to use techniques such as multi-voting to shortlist the areas that will have lasting impact on solving the problem at hand. In certain instances, the team might collect additional data to better understand and quantify the potential causes. Simple hypothesis testing — such as asking "Where?", "When?", and "How?" — lead to a better understanding of the relationship between the potential cause and the problem the team is tasked to solve.

1**.6 Decision making is the process**

Step 1: Identify the decision

You realize that you need to make a decision. Try to clearly define the nature of the decision you must make. This first step is very important.

Step 2: Gather relevant information

Collect some pertinent information before you make your decision: what information is needed, the best sources of information, and how to get it. This step involves both internal and external “work.” Some information is internal: you’ll seek it through a process of self-assessment.

Step 3: Identify the alternatives

As you collect information, you will probably identify several possible paths of action, or alternatives. You can also use your imagination and additional information to construct new alternatives. In this step, you will list all possible and desirable alternatives.

Step 4: Weigh the evidence

Draw on your information and emotions to imagine what it would be like if you carried out each of the alternatives to the end. Evaluate whether the need identified in Step 1 would be met or resolved through the use of each alternative. As you go through this difficult internal process, you'll begin to favor certain alternatives: those that seem to have a higher potential for reaching your goal. Finally, place the alternatives in a priority order, based upon your own value system.

Step 5: Choose among alternatives

Once you have weighed all the evidence, you are ready to select the alternative that seems to be best one for you. You may even choose a combination of alternatives. Your choice in Step 5 may very likely be the same or similar to the alternative you placed at the top of your list at the end of Step 4.

Step 6: Take action

You're now ready to take some positive action by beginning to implement the alternative you chose in Step 5.

Step 7: Review your decision & its consequences

In this final step, consider the results of your decision and evaluate whether or not it has resolved the need you identified in Step 1. If the decision has not met the identified need, you may want to repeat certain steps of the process to make a new decision. For example, you might want to gather more detailed or somewhat different information or explore additional alternatives. Formation is external: you'll find it online, in books, from other people, and from other sources.

SECTION TWO

CRITICAL THINKING STANDARDS &

CHARACTERISTICS

3 Standards & characteristics of Critical Thinking

2.1 Standards of Critical Thinking

A standard is a measure of how good something is. A foundational component of critical thinking is the ability to evaluate one's reasoning. We can evaluate our thinking – and the thinking of others – by applying the intellectual standards of clarity, accuracy, precision, relevance, depth, breadth, logic, significance, and fairness. Students who develop the skills necessary to evaluate their thinking and the thinking of others by applying the standards will improve their thinking.

- Clarity is an important standard of critical thought. Clarity of communication is one aspect of this. We must be clear in how we communicate our thoughts, beliefs, and reasons for those beliefs.

Clarity: being easy to understand and free from confusion or ambiguity

- ✓ Could you elaborate?
- ✓ Could you illustrate what you mean?
- ✓ Could you give me an example?

- Precision involves working hard at getting the issue under consideration before our minds in a particular way. One way to do this is to ask the following questions: What is the problem at issue? What are the possible answers? What are the strengths and weaknesses of each answer? Precision goes one step further than Accuracy. It demands that the words and data used are exact. If no more details could be added, then it has Precision.

Precision: being accurate, definite and exact

- ✓ Could you be more specific?
- ✓ Could you give me more details?
- ✓ Could you be more exact?

- **Accuracy** is unquestionably essential to critical thinking. In order to get at or closer to the truth, critical thinkers seek accurate and adequate information. They want the facts, because they need the right information before they can move forward and analyze it.

Accuracy: being free from errors, mistakes, or distortions. Accuracy makes sure that all information is correct and free from error. If the thinking is reliable, then it has Accuracy**.**

- ✓ How could we check on that?
- ✓ How could we find out if that is true?
- ✓ How could **we verify or test** that?

Accuracy and precision are two important factors to consider when taking data measurements. Both accuracy and precision reflect how close a measurement is to an actual **value**, but accuracy reflects how close a measurement **is to a known or accepted value**, while precision reflects how reproducible measurements are, even if they are far from the accepted value. Precision& accuracy is how consistent results are when measurements are repeated. Precise values differ from each other because of random error, which is a form of observational error. Take experimental measurements for another example of precision and accuracy. If you take the measurements of the mass of a 50.0-gram standard sample and get values of 47.5, 47.6, 47.5, and 47.7 grams, your scale is precise, but not very accurate. If your scale gives you values of 49.8, 50.5, 51.0, 49.6, it is more accurate than the first balance, but not as precise. The more precise scale would be better to use in the lab, providing you made an adjustment for its error

- **Relevance m**eans that the information and ideas discussed must be logically relevant to the issue being discussed.

Relevance: bearing upon or relating to the matter at hand

- ✓ How does that relate to the problem?
- ✓ How does that bear on the question?
- ✓ How does that help us with the issue?

- **Consistency is** a key aspect of critical thinking. Our beliefs should be consistent.

2.2 Characteristics of critical thinker

1. Observation

Observation is one of the earliest critical thinking skills we learn as children it's our ability to perceive and understand the world around us. Careful observation includes our ability to document details, and to collect data through our senses. Our observations will eventually lead to insight and a deeper understanding of the world

2. Objectivity

Good critical thinkers are able to stay as objective as possible when looking at information or a situation. They focus on facts, and on the scientific evaluation of the information at hand. Objective thinkers seek to keep their emotions (and those of others) from affecting their judgment. Critical thinkers do not jump to conclusions.

3. Introspection

This is the art of being aware of your thinking -- or, to put it another way, thinking about how you think about things. This is your ability to examine your inner-most thoughts, feelings and sensations.

4. Analytical thinking

The best analytical thinkers are also critical thinkers, and vice versa. The ability to analyze information is key when looking at any almost anything, whether it is a contract, report, business model or even a relationship. Analyzing information means to break information down to its component parts and evaluate how well those parts function together and separately.

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 (Data analysis), and then understand what it means (Interpretation)

5. Open-mindedness

They want to hear all perspectives. Critical thinkers don't jump to conclusions. 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.

6. Active listening:

Don't be a passive listener during a conversation or discussion, instead actively try to participate. This will force you to ask questions that will allow you to distinguish facts from assumptions**.**

7. **Humility**:

Good Critical Thinkers acknowledge that their beliefs and ideas might not always be the best, and that they cannot know everything.

8. Creativity:

Be creative and enter a brainstorm session, for example, without any prejudices or opinions. You will be surprised at the ideas and solutions that arise. Come up with a solution that no one else has thought of before

9. Communication

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 about Explanation, Interpersonal, Presentation, Teamwork, Verbal communication, written communication

SECTION THREE

BENEFITS &BARRIERS OF CRITICAL THINKING

4 benefits &barriers of critical thinking

4.1 benefits of critical thinking

- ✓ Those who lack critical thinking skills often assume that everything they hear is true, regardless of the source
- ✓ Critical Thinking, it is the intellectually disciplined means of aggressively conceptualizing, applying, analyzing, synthesizing and assessing information collected through experience, observation or reflection, as a guide to taking actions.
- ✓ Every day you make thousands of decisions. Most of them are made by your subconscious and a few, like which shoes to wear today, don't require much thought. But the most important decisions you make can be hard and require a lot of thought, such as when or if you should change jobs, relocate to a new city, buy a house, get married,(conscious)
- ✓ Your quality of life largely depends on the quality of your decisions, but equally as important is the quality of your thoughts
- ✓ You can use critical thinking to free yourself from cognitive biases, negative thinking, and limiting beliefs that are holding you back in any area of your life.
- ✓ Critical thinking will enable you to better express your thoughts, ideas, and beliefs.
- ✓ It can boost your confidence since you and those around you trust your opinions
- ✓ Employing critical thinking makes you more open-minded and better able to understand others' points of view**.**
- ✓ Critical thinking keeps you from jumping to conclusions.
- ✓ Critical thinkers are able to see both sides of any issue and are more likely to discover bilateral solutions
- ✓ Critical thinking can help you in any profession where to analyze information, systematically solve problems, generate innovative solutions, plan strategically, think creatively,
- ✓ Critical Thinking is, in short, self-directed, self-disciplined, self-monitored, and self-corrective thinking

- ✓ Critical thinking is considered a soft or enterprise skill — a core attribute that is required to succeed in the workplace. Soft skills include problem solving, creativity, communication and presentation skills, and digital literacy.
- ✓ By improving the quality of your thoughts and your decisions, better critical thinking skills can bring about a big positive change in your life
- ✓ It's not an exaggeration to say that the quality of your life largely depends on the quality of the decisions you make. Amazingly, the average person makes 35,000 conscious decisions every day!
- ✓ Critical thinking enables one to look at situations strongly and weigh all probable solutions before coming up with the ultimate decision**.**
- ✓ Critical Thinking is the ability to analyze the way you think and present evidence for your ideas, rather than simply accepting your personal reasoning as sufficient proof.
- ✓ You can gain numerous benefits from mastering critical thinking skills, such as better control of your own learning and empathy for other points of view.
- ✓ Critical thinkers consider all options before they act**.**
- ✓ It helps present thoughts in an organized and persuasive manner**.**
- ✓ Critical Thinking is important in life. It helps you to think creatively – 'outside the box'. It **keeps you from becoming narrow**. Critical Thinking is expected of you in higher education. It can lead to developing your judgment, evaluation and problem solving ability
- ✓ Education is a means for achieving critical thinking
- ✓ critical thinking plays a crucial role in evaluating new ideas, selecting the best ones and modifying them if necessary
- ✓ critical thinking plays a crucial role in evaluating new ideas, selecting the best ones and modifying them if necessary
- ✓ **Save time with** a Critical Thinking mindset. You will already know that not all information is relevant to your decision-making
- ✓ Critical Thinking enhances language and presentation skills. Thinking clearly and systematically can improve the way we express our ideas. In learning how to analyses the logical structure of texts, critical thinking also improves comprehension abilities.

- ✓ A good critical thinker knows how to separate facts from opinions
- ✓ A critical thinker has the self-awareness to know the difference between a rational thought based on careful consideration and an emotional response based on personal bias
- ✓ Ultimately, Critical Thinking Skills help you to better understand the experiences and views of others, enhancing your ability to work with different people.
- ✓ 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

4.2 Barriers of critical thinking

Critical thinking is one of the most essential **soft skills a person** can develop over their lifetime, as it enables individuals to come up with viable and unique solutions to common. 4 Common Barriers to Critical and Analytical Thinking

- **Egocentric Thinking**

One of the barriers to critical thinking that is most difficult to overcome is the tendency to view everything in relation to oneself. Analyzing various perspectives to evaluate their validity and to find the best aspects of each is an important part of critical thinking. The reason this barrier is so difficult to overcome is because most egocentric people are unwilling or unable to identify this characteristic within themselves

- **Group Think**

Critical thinking by its very nature questions **popular ideas, opinions, and thoughts**. When people "think" as a group, not much thinking is actually being done. This is an especially challenging barrier to overcome as it requires **individuals to stand apart from the group**, something many people are very unwilling to do. More than that, however, critical thinking requires people to **question their own beliefs**

- **Social Conditioning**

  Social conditioning is what leads to stereotyping and unjustified assumptions. By definition, stereotypes and assumptions require absolutely no **individualistic thinking** or analysis of the facts. Social conditioning can also prevent people from recognizing and therefore accepting that they are making assumptions and judging based on stereotypes, causing it to be another one of the more complicated barriers to overcome. A stereotyping is **standardized mental picture that is held in**

common by members of a group and that represents an oversimplified opinion, prejudiced attitude, or uncritical judgment

- **Drone Mentality**

  It is easy for even the most open-minded individual to fall into a routine, and while routine is not necessarily a bad thing, it can hinder one's analytical thinking skills. Think about it: if you were to do the same thing day after day, week after week, and month after month, you would forget how to **respond to new situations**. Moreover, you would begin to shy away from new situations and challenges for the sake of ease. While convenience is great, it can take a real circle on your critical thinking capabilities.

  The following list of barriers to critical thinking will help guide you to recognizing the challenges that **await** you and was compiled from Critical Thinking:

  - ✓ Pride
  - ✓ greed
  - ✓ egocentrism (self-centered thinking)
  - ✓ an over-reliance on feelings
  - ✓ reacting in self-defense - fear of personal attack - believing one's ideas fear of change or an unwillingness to change
  - ✓ lack of relevant background information or ignorance
  - ✓ inappropriate bias
  - ✓ prejudice/bias
  - ✓ unnecessary assumptions
  - ✓ fear of being wrong or face-saving
  - ✓ peer pressure
  - ✓ narrow-mindedness or close-mindedness
  - ✓ blaming others
  - ✓ denial
  - ✓ political correctness
  - ✓ excessive anger, hate, or bitterness
  - ✓ lack of personal honesty
  - ✓ laziness
  - ✓ poor reading and comprehension skills
  - ✓ excessive addiction

- ✓ lack of humility
- ✓ One of the barriers to critical thinking that is most difficult to overcome is the tendency to view everything in relation to oneself.

Group assignment 1

Using the steps of fishbone analysis diagram

- ✓ Identify &brain storm the potential problem of one organization
- ✓ Work out the Major Factors Involved: Identify the primary causes of the problems related to, people, process, physical environment, productivity, equipment, materials, external factors, etc. & Make sure that the categories you use are relevant to your particular problem.
- ✓ Brainstorm possible causes of the cause of the problem that may be related to the factor. Again ask "Why does this happen?" about each cause. Write sub-causes branching off the causes.
- ✓ Showing all the possible causes of your problem & analyze the solution by identifying the most likely **root causes. Depending on the complexity and importance of the problem, you can** now investigate the most likely causes further than the groups by FGD or KI or surveys which you can use to decide whether the causes identified are correct.

Group assignment 2

From Key causes and problems listed below:

A. Discuss and identify the potential problem or effect of the case study
B. Discuss the primary causes of the problem or effect (factors involved)
C. Identify more specific 'causes of causes'. Continue branching off until every possible cause has been identified (if possible add additional causes)
D. analyze the solution by identifying the most likely root causes
    - ✓ Organizational change barriers

- ✓ lack of performance based evaluation of leaders
- ✓ Poor management,
- ✓ poor leadership, Management turnover
- ✓ lack of strategic planning
- ✓ staff shortage, Lack of employee involvement and participation
- ✓ employee resistance to the change
- ✓ Fear of losing job
- ✓ High employee turnover
- ✓ Inadequate human resource management practices**.**

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