

## Topic 1: Introduction To Creative Thinking

### Objectives

After completing this chapter, you should be able to:-

- Identify your attitude towards learning.
- Distinguish between critical thinking and creative thinking.

### Discover your attitude towards learning

- To learn and apply quality study skills, it is essential to have a positive attitude.
- In fact, your attitude and motivation will make all the difference.
- To measure your attitude toward studying, complete this exercise. If the statement describes your attitude or study habit check YES and if not check NO. Be very honest.

ATTITUDES	YES	NO
1. I am satisfied with my test scores on most Examinations.	( )	( )
2. If I do poorly on a test, I increase my efforts and get help from a teacher, a tutor, or a study partner.	( )	( )
3. When required, I can concentrate on studies. I am not easily distracted.	( )	( )

4. The challenge of taking study notes on difficult textbook reading does not throw me.	( )	( )
5. Although busy, I am able to find priority time to study. Procrastination and cramming are not problems for me.	( )	( )
6. I attend class regularly and carefully prepare for most class sessions.	( )	( )
7. I have a clear reason for going to school and know that good study skills will get me closer to my career goal.	( )	( )
8. When I have a boring instructor, I realize I must work harder to make the material interesting.	( )	( )
9. My moods or personal problems seldom prevent me from completing my work.	( )	( )
10. I can visualize myself completing my goal.	( )	( )
11. I know how to reward myself for finishing a difficult assignment.	( )	( )
12. I listen carefully while taking class notes, and I review them within 24 hours.	( )	( )

- For any item where you checked NO, be sure to carefully read this module devoted to that particular study skill.
- This module has helped hundreds of students and it can help you.

## Discover your attitude towards learning

- This Module is an introduction to critical thinking.
- It provides some of the basic tools for clear thinking on any issue.
- The techniques and topics discussed can be applied to any area in which clear thought is required.
- They have direct applications in most academic disciplines and in c of life in which people present reasons and evidence in support of conclusions.
- This Module is also an exploration of the connections between creativity and brainstorming
- These connections are rarely studied, because the fields of creativity research and brainstorming have proceeded independently.
- But before we begin to explain the creative thinking techniques, we should explore that there are two harmonious processes:
  - One process is the production of ideas (Creative Thinking).
  - The other process is the evaluation of ideas (Critical Thinking).
- In this chapter we would like to explain the critical thinking skills as introduction to brainstorming.

## Topic 2: Critical Thinking

### Objectives

**After completing this chapter, you should be able to:-**

- Identify The Meaning of Critical Thinking.
- Identify How to be A Critical Thinker.

### Critical Thinking

- The idea of critical thinking has provided the impetus for one of the great growth areas in philosophy of education over the last thirty years, especially in America.
- From modest beginnings (see Ennis 1962); it has been developed into a multimillion dollar industry producing materials (e.g. books, courses, pamphlets)
- which aim to teach people to think critically whatever the actual content of their thoughts, e.g.
- history, science, literature or simply the problems of practical life.
- Whole departments in universities are devoted to the investigation and dissemination of such critical thinking.

### Critical Thinking Properties

- Critical thinking means correct thinking about the world. That is focused on deciding what to believe or do.
- Critical thinking enables an individual to be a responsible citizen who contributes to society, and not be merely a consumer of society's distractions.

- Critical thinking can be described as the scientific method applied by ordinary people to the ordinary world.
- Critical thinking is the awareness of a set of interrelated critical questions.
- Critical thinking is the ability to ask and answer critical questions.
- Critical thinking is the desire to actively use the critical questions.
- Attention
  - Critical Thinking consists of an awareness of a set of interrelated critical questions, plus the ability and willingness to ask and answer them at appropriate times.



## •Alternative Thinking Styles:

1. The Absorbed Thinking.
2. The Active Participation Thinking.

## Topic 3: Brainstorming

### Objectives

After completing this chapter, you should be able to:-

- Identify The Process of Brainstorming, its Origins and Kinds.
- Apply the Brainstorming Skills Order to Solve Problems.
- Examine the Mind Maps as A Technique for Creative Thinking.

### Introduction

- **Brainstorming:** is a useful and popular tool that you can use to develop highly creative solutions to a problem. It is particularly helpful when you need to break out of stale, established patterns of thinking, so that you can develop new ways of looking at things.
- **This can be** when you need to develop new opportunities, where you want to improve the service that you offer, or when existing approaches just aren't giving you the results you want.
- **This increases the richness of solutions explored** (meaning that you can find better solutions to the problems you face, and make better decisions.) It can also help you get.
- While the fundamentals of brainstorming have been put to use throughout history, a name wasn't actually put to the process until.



### Brainstorming

A method for developing creative solutions to problems. It works by focusing on a problem, then deliberately coming up with as many deliberately unusual solutions as possible, then pushing these ideas as far as possible.

### The Origins of Brainstorming:

- The exact beginnings of brainstorming aren't recorded probably because brainstorming is a creative thought process that comes to certain people naturally.
- While the fundamentals of brainstorming have been put to use throughout history, a name wasn't actually put to the process until.
- Alex Osborn, a 1940s advertising executive, decided that the conventional methods of overcoming obstacles and creating new ideas were too inhibitive and weren't conducive to real creativity.

### How Brainstorming Came About?

- At first, Osborn referred to brainstorming as a "think up" process and "think up" had four fundamental rules.

## **These four rules in brainstorming history stated that:**

- The goal of a "think up" session would be to come up with as many ideas as possible.
- There would be absolutely no criticism of any thoughts or ideas.
- No idea should be considered too outlandish and such ideas would be encouraged.
- Members of a "think up" team should build upon one another's ideas.
- After Osborn introduced the concept of brainstorming to us, it took the world by fire. Nowadays companies across the globe benefit from brainstorming and use brainstorming for marketing concepts, advertising campaigns and management methods and strategies, and for many, many more purposes.

## **Brainstorming and Lateral Thinking**

- Brainstorming is a lateral thinking process. It asks that people come up with ideas and thoughts that seem at first to be a bit shocking or crazy.
- You can then change and improve them into ideas that are useful.
- During brainstorming sessions there should therefore be no criticism of ideas.

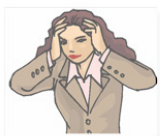
- You are trying to open up possibilities and break down wrong assumptions about the limits of the problem.
- Ideas should only be evaluated at the end of the brainstorming session you can then explore solutions further using conventional approaches.
- If your ideas begin to dry up, you can 'seed' the session with, for example, a random word. Brainstorming is a lateral thinking process. It asks that people come up with ideas and thoughts that seem at first to be a bit shocking or crazy.
- You can then change and improve them into ideas that are useful.
- During brainstorming sessions there should therefore be no criticism of ideas.
- You are trying to open up possibilities and break down wrong assumptions about the limits of the problem.
- Ideas should only be evaluated at the end of the brainstorming session –you can then explore solutions further using conventional approaches.
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## Individual Brainstorming

- When you brainstorm on your own you will tend to produce a wider range of ideas than with group brainstorming - you do not have to worry about other people's egos or opinions, and can therefore be more freely creative.
- You may not, however, develop ideas as effectively as you do not have the experience of a group to help you.
- When Brainstorming on your own, it can be helpful to use a kind of mind map to arrange and develop ideas.

## Examples

- Individual brainstorming can also be a very valuable exercise. There are a number of reasons why a person would brainstorm on an individual basis.
- These are just a few individual brainstorming examples.



Businesswoman



Son



Employee

- A professional businesswoman in her thirties wants to change her career. She doesn't know exactly what she wants to do, but she knows she isn't happy in her current line of work. She conducts an intense brainstorming session to determine which fields she should pursue.

- A son wants to get a very special gift for his parents' fiftieth anniversary, but he's not sure what to get them. He brainstorms different gift ideas to find a gift that will show his parents just how much he appreciates them.
- A department employee is being considered for a promotion and he wants to prove that he's the best man for the job. He brainstorms different ways to demonstrate his leadership skill, his value to the company and his management potential.

## Mind Maps

- Mind Mapping is a useful technique that improves the way you take notes, and supports and enhances your creative problem solving.
- By using Mind Maps, you can quickly identify and understand the structure of a subject, and the way that pieces of information fit together, as well as recording the raw facts contained in normal notes.
- As such, a good Mind Map shows the 'shape' of the subject, the relative importance of individual points, and the way in which facts relate to one another.
- **Mind Maps are useful for:**
  - Summarizing information;
    - Consolidating information from different research sources;
    - Thinking through complex problems.
    - Presenting information in a format that shows the overall structure of your subject.

## Drawing Simple Mind Maps: Six Thinking Hats Technique

- Helps you look at important decisions from a number of different perspectives.
- Helps you make better decisions by pushing you to move outside your habitual ways of thinking.
- Your decisions and plans will mix ambition, skill in execution, sensitivity, creativity and good contingency planning.

### Basic Idea

- The group looks at the issue from one angle at the time (wearing one hat at the time)
- At a given phase in the discussion everyone is looking from the same angle onto the problem, the group takes one perspective (all in the meeting wearing the same hat at a given time).
- The colors of the hats indicate the view that is taken.
- Purely the Facts
- Emotional Thinking
- Positive Thinking
- Critical Thinking
- Creative Thinking
- Big Picture

### Purely the Facts

- Focus on data available
- Look at information you have
- See what you can learn from available information
- Look for gaps in your knowledge and try to fill them
- Ask for white hat thinking

- What information do we have?
- What information is missing?
- How do we get the information we need?

### Emotional Thinking

- Use intuition, gut reaction and emotion
- Think how other people will react emotionally
- Understand the intuitive responses of people who do not know your reasoning.
- Ask for red hat thinking
- What do you like about the idea?
- How do you feel about this?
- What don't you like about this?

### Positive Thinking

- The optimistic viewpoint that helps you see all the benefits of the decision and value in it.
- Spot opportunities that arise from the idea.
- Helps you get going when everything looks gloomy and difficult.
- Ask for yellow hat thinking.
- What are the benefits?
- Why should it work?

### Critical Thinking

- Look at things pessimistically, cautiously and defensively.
- See which ideas won't work Highlights weak points in a plan and allows you to eliminate them.
- Alter the approach.
- Prepare contingency plans.



## Ask for blue hat thinking

- Will it work?
- Does it fit?
- What are the dangers and the problems?

## Creative Thinking

- Stands for creativity
- Develop creative solutions to a problem
- Freewheeling way of thinking where there is little criticism of ideas
- Exploration of the ideas
- Proposals and suggestions
- Alternatives
- New ideas
- Provocations

## The Big Picture

- Stands for process control
- Worn by people chairing meetings
- When running into difficulties because ideas are running dry

## Direct activity to green hat

- When contingency plans are needed

## Ask for black hat thinking

- What sort of thinking is needed?
- Where are we now?
- What is the next step?
- Where have we been?

## The Six Thinking Hats Summary

- White hat thinking identifies the facts and details of a topic.
- Black hat thinking examines the problems associated with a topic.

- Yellow hat thinking focuses on the positive aspects of a topic.
- Red hat thinking looks at a topic from the point of view of emotions and feelings.

- Green hat thinking requires creativeness, imagination and lateral thinking about a topic.

- Blue hat thinking focuses on reflection, meta-cognition (thinking about the thinking that is required), and the need to understand the big picture.

## Remember

- Mind Mapping is an extremely effective method of taking notes. Mind Maps show not only facts, but also the overall structure of a subject and the relative importance of individual parts of it. They help you to associate ideas and make connections that you might not otherwise make.

- If you do any form of research or note taking, try experimenting with Mind Maps. You will find them highly effective!

## Group Brainstorming

- Group brainstorming can be very effective as it uses the experience and creativity of all members of the group.

- When individual members reach their limit on an idea, another member's creativity and experience can take the idea to the next stage.



- Therefore, group brainstorming tends to develop ideas in more depth than individual brainstorming.
- Brainstorming in a group can be risky for individuals.
- Valuable but strange suggestions may appear stupid at first sight. Because of this, you need to chair sessions tightly so that uncreative people do not crush these ideas and leave group members feeling humiliated.



## How to Use the Tool

**To run a group brainstorming session effectively, do the following:**

- Define the problem you want to solve clearly, and lay out any criteria to be met.
- Keep the session focused on the problem.
- Ensure that no one criticizes or evaluates ideas during the session. Criticism introduces an element of risk for group members when putting forward an idea. This stifles creativity and cripples the free running nature of a good brainstorming session.

- Where possible, participants in the brainstorming process should come from as wide a range of disciplines as possible. This brings a broad range of experience to the session and helps to make it more creative.
- Brainstorming is a great way of generating radical ideas. During the brainstorming process there is no criticism of ideas, as free rein is given to people's creativity (criticism and judgment cramp creativity).

## Examples

- Oftentimes brainstorming is conducted as a group, with multiple individuals contributing their knowledge and experience to the brainstorming process.
- The following are some brainstorming examples that show how group brainstorming can benefit individuals and organizations.
  - **Group Brainstorming Examples:**
    - Company cut costs
    - Company new product
    - Family member
  - financial crisis
  - A company may need to cut costs in order to meet budgetary requirements. The department heads may meet to brainstorm on how to reduce expenses without sacrificing resources.

- A company has an idea for a new product, but they aren't exactly sure how to market the product to the public. Members of the marketing team may brainstorm innovative marketing ideas that will ensure the product's success.
- A family member may be in financial crisis. Members of the family may brainstorm to develop a solution for the family member in trouble.

### Summary

- Brain Storming is effective when done right
- Brain Storming Can help to create unity
- Brain Storming Helps to take routine away from the office
- New ideas get generated for possible solutions

### Rules for a successful brainstorm session:

- Participants should come up with as many ideas as possible.
- There are NO bad ideas.
- No judgment should be passed on any idea until the end of the session.
- No negative or positive judgment.
- Participants are encouraged to build on each others' ideas.
- Combine ideas.
- Take one idea in unexpected directions.

### Tips for Successful Brainstorm Session

#### Preparation:

- Identify precise topic.
- Use an experienced (prefer: external) facilitator.

- Document results: Make somebody write everything down.
- No more than 8-10 people in one session.
- More participants: break into groups and combine later.

### Evaluate ideas in 2 steps

- **Step 1:** Define the criteria
- **Step 2:** Score the results on the criteria

### At the end of the session

- Discuss steps needed to implement ideas
- If this is complicated, do another brainstorming session on how to implement ideas.