1 TYPES OF THINKING

INTRODUCTION

1. What is lateral thinking? How is it different from ‘vertical’ thinking?

2. Read the story. What would you have done?

Many years ago when a person who owed money could be put in jail, a merchant in London owed a huge sum to a money-lender. The latter, old and ugly, fancied the merchant’s beautiful daughter. He proposed that he would cancel the debt if he could have the girl instead, saying that let the Providence decide the matter. He told them that he would put a black pebble and a white pebble into an empty money-bag and the girl would then have to pick one of the pebbles. If she chose the black one, she would become his wife and her father’s debt would be cancelled. If she chose the white pebble, she would stay with her father and the debt would still be cancelled. But if she refused to pick out the pebble, her father would be thrown into jail and she would starve.

They were standing on a pebble-strewn path and as they talked the money-lender picked two pebbles. The girl, sharp-eyed with fright, noticed that he picked up two black pebbles and put them into the money-bag. He then asked the girl to pick out the pebble and thus decide her fate and that of her father. (By Edward De Bono)

? What would you have done if you had been the unfortunate girl?

Vertical thinkers find three possibilities:

1. The girl should refuse to pick out the pebble.
2. She should show that there are two black pebbles in the bag, exposing the money-lender as a cheat.
3. The girl should take a back pebble and sacrifice herself to save her father from prison.

They are concerned with the fact that the girl has to take a pebble. Lateral thinkers tend to explore all the different ways of looking at a situation rather than accepting the most promising (or probable one) and proceed from that. By using lateral thinking, the girl changed what seemed to be a hopeless situation into an extremely advantageous one. Why? How?

3. By asking “Yes/No” questions, find out the background to each story.

a) A man walks into a bar and asks for a drink. The bartender pulls out a gun and points it at him. The man says, "Thank you," and walks out.
b) A man is lying dead in a room. There is a large pile of gold and jewels on the floor, a chandelier attached to the ceiling, and a large open window.
c) In the middle of the ocean is a yacht. Several corpses are floating in the water nearby.
What Exactly Is Lateral Thinking?

Lateral thinking was developed by Edward de Bono in response to the following question:

*Why do some people always seem to be having new ideas while others of equal intelligence never do?*

He describes lateral thinking as a special kind of thinking that is distinct from ordinary logic – which he terms ‘vertical thinking’:

* Lateral thinking is concerned with the generation of new ideas... It leads to changes in attitude and approach; to looking in a different way at things which have always been looked at in the same way. Lateral thinking is quite distinct from vertical thinking, which is the traditional type of thinking. In vertical thinking one moves forward by sequential steps each of which must be justified... Lateral thinking and vertical thinking are complementary.* (Edward de Bono, *Lateral Thinking*)

De Bono describes lateral thinking as ‘a habit of mind and an attitude of mind’ which can be fostered by practising specific lateral thinking techniques, such as:

- Challenging assumptions (e.g. **by thinking outside the box**)
- generating alternatives (even when you have an apparently satisfactory solution)
- suspended judgement
- **brainstorming**
- (striking) analogies
- random stimulation (e.g. by picking a random dictionary word and applying it to the problem)

Do you make use of lateral thinking techniques?

Do you agree that creative people ‘think different’ to the rest of us?

Is it possible to be outstandingly creative without using lateral thinking?

Read the following text and compare it with your views.

Is Lateral Thinking Necessary for Creativity? (By Mark McGuinness)

The phrase ‘lateral thinking’ is frequently used interchangeably with ‘creativity’. We take it for granted that creative people **think different** to the rest of us. It’s what makes them creative. Or is it?

Psychology professor and creativity expert Robert Weisberg is highly critical of lateral or divergent thinking and claims it is unnecessary for creativity.

He argues that there is very little evidence of lateral thinking in the work of great creators such as Mozart, Beethoven, Darwin, Edison, or the Wright brothers. Weisberg claims that the creative process takes place via a process of logical thinking, trial and error, feedback and reflection – all of which involves ‘ordinary thought processes’. Whereas de Bono stresses the need to take off the ‘blinkers’ of past knowledge in order to look at things afresh and come up with new solutions, Weisberg believes that expertise and knowledge based on past experience are the foundation on which creators build.

So for Weisberg, creative people differ from noncreative people **not** in their use of lateral thinking, but in possessing different knowledge and skills. He does concede that analogies are important, but argues that these are typically ‘near’ (i.e. obvious) analogies rather than the ‘distant’ (surprising) analogies recommended by de Bono.
A Whack on the Side of the Head

A. LISTENING

1) Match the words with their meanings

<table>
<thead>
<tr>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>frivolous</td>
<td>inborn, inherent</td>
</tr>
<tr>
<td>to err</td>
<td>force out, remove</td>
</tr>
<tr>
<td>cranium</td>
<td>a smart blow</td>
</tr>
<tr>
<td>innate</td>
<td>suppress, extinguish</td>
</tr>
<tr>
<td>to snuff out</td>
<td>depart from norm</td>
</tr>
<tr>
<td>whack</td>
<td>head, skull</td>
</tr>
<tr>
<td>to bemoan</td>
<td>be mistaken</td>
</tr>
<tr>
<td>to deviate</td>
<td>lacking in seriousness</td>
</tr>
<tr>
<td>germinal</td>
<td>express pity, lament</td>
</tr>
<tr>
<td>to dislodge</td>
<td>in the earliest stage of development</td>
</tr>
</tbody>
</table>

2) While listening to the recording, make notes about the following:
   a) characteristics of innovative people
   b) role of knowledge in the creative process
   c) key to being creative
   d) reasons for being creative
   e) types of thinking in germinal and practical phases
   f) role of routine thought-paths
   g) 'mental locks'
   h) ways of opening these locks
   i) 'whacks' - their effects and forms

B. TEXT COMPLETION

Innovative people feel a sense of _____________ - a desire to make their ideas happen.
An innovative person has a _____________ for what s/he does.
The creative person wants to be ___________________
The key to being creative lies in what you do with your ____________________
In creative process you use crazy, foolish ideas as ___________ __________ to practical new ideas.
Non-innovative people tend to say that there is no reason to ____________ from what has worked in the past.
One very important reason for being creative is ____________________
In the germinal phase, ideas are ___________ and ________________
In the practical phase, they are ______________ and ________________.
The use of logic is ________________ in the practical phase.
We have developed ________________________ which guide us through our day-to-day encounters.
These attitudes are ________________ for most of our activities.
There are ten ________________ ________________ which are especially ________________ to our thinking.
A whack on the side of the head should force you to ____________ the problem, to ____________ you to ask new questions.
CRITICAL THINKING

Raymond S. Nickerson (1987), an authority on critical thinking, identifies the following characteristics of a good critical thinker in terms of knowledge, abilities, attitudes, and habitual behaviour pattern:

- uses evidence impartially
- distinguishes between logically valid and invalid inferences
- suspends judgment in the absence of sufficient evidence to support a decision
- understands the difference between reasoning and rationalizing
- attempts to anticipate the probable consequences of alternative actions
- can strip a verbal argument of irrelevancies and phrase it in its essential terms
- questions one's own views and attempts to understand both the assumptions that are critical to those views and the implications of the views
- is sensitive to the difference between the validity of a belief and its intensity
- is aware of the fact that one's understanding is always limited
- recognizes the danger of weighting evidence according to personal preferences

The 4-Step Guide to Critical Thinking Skills
(By Jeff Dunn on June 27, 2013)

Step 1 - Knowledge: Identify and recall information. Answer the basic questions (Who, What, Why, Where, etc.)

Step 2 – Comprehension: Organize your thoughts, select the facts and separate them from inferences, choose the ideas. Be able to interpret and paraphrase what you’re reading and learning.

Step 3 - Application: Be able to use facts, rules, and apply principles. You should be able to solve problems and give examples.

Step 4 - Analysis: Separate the whole topic or story into components / parts and pick each of these apart. Examine and then infer.

Fact or myth? All the ideas below are commonly believed to be true but only some of them really are. Read them and decide which are true. Use the expressions of certainty on page 5. Then listen to the answers and find out if you were right.

1. A sudden fright or profound shock can turn your hair white overnight.
2. Women have one more rib than men.
3. Newborn babies have more bones in their bodies than adults.
4. One bite from a tarantula is usually deadly.
5. Elephants are afraid of mice.
6. If you are struck by lightning, you will probably be killed.
7. Turkeys cannot fly.
8. Water going down the plughole travels in the opposite direction in the northern hemisphere to how it travels in the southern hemisphere.
9. When faced with danger, ostriches bury their heads in the sand.
Real life mysteries

1. **Study the following pictures. First answer the basic questions (Who, what, where, when etc.) to establish the facts. What else would you like/need to know? Draw your own inferences.**

*Use the following expressions of certainty:*

- **CERTAIN**
  - I’m absolutely sure...
  - I’m certain...
  - I’m positive...
  - It must be (have been)...

- **TENTATIVELY POSITIVE**
  - It may/might/could be(have been)...
  - It’s possible (that)...
  - It seems/appears to be...
  - it ought to be (right/correct...)  

- **NEGATIVE**
  - It can’t be (have been)
  - It’s doubtful...
  - Definitely/certainly not
  - It’s impossible/unlikely
  - I doubt that

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Three schoolchildren found this on an Australian beach in 1993

Something unusual happened in Hindu temples all over the world in 1995

This photo was taken in Scotland in 1934. It appeared in newspapers and caused an instant sensation.
Six Thinking Hats - Looking at a decision from all points of view

This technique was created by Edward de Bono in his book '6 Thinking Hats'. It blocks the confrontations that happen when people with different thinking styles clash over the same problem. Plans developed thus will be sounder and more resilient than would otherwise be the case.

Many successful people think from a very rational viewpoint. Often, though, they may fail to look at a problem from an emotional, intuitive or creative perspective. Similarly, pessimists may be excessively defensive, and emotional people may fail to look at decisions calmly and rationally.

Each 'Thinking Hat' is a different style of thinking.

**White Hat:** Information. What information/facts do I have? What information do I need? Where are we now? This is where you analyze past trends, and try to extrapolate from historical data.

**Red Hat:** Feelings. How do I feel about this? What do/don’t I like about the idea? You look at problems using intuition, gut reaction, emotion, hunches. Also try to think how other people will react emotionally. Try to understand the responses of people who do not know your reasoning.

**Black Hat:** Cautions/Judgment. What is wrong with this? You look at all the bad points of the decision. Try to see why it might not work. This makes your plans more resilient. It can also help you to spot fatal flaws and risks before you embark on a course of action, or to prepare contingency plans to counter them. Many successful people tend to think positively and cannot see problems in advance. This leaves them under-prepared for difficulties.

**Yellow Hat:** Benefits. What are the good points? Why can this be done? It helps you to think positively. It is the optimistic viewpoint that helps you to see all the benefits, advantages, savings of the decision. This thinking helps you to keep going when everything looks gloomy and difficult.

**Green Hat:** Creativity. What new ideas are possible? What is my suggestion? Can I create something new? This is where you can develop creative solutions to a problem. It is a freewheeling way of thinking, in which there is little criticism of ideas.

**Blue Hat:** Thinking about thinking. It stands for the process control. This hat is worn by people chairing meetings. When running into difficulties because ideas are running dry, they may direct activity into Green Hat thinking. When contingency plans are needed, they will ask for Black Hat thinking, etc.
Look at the following problems. Select one; then suggest a variety of solutions. Think about the implications of each alternative. Use the 6 Thinking Hats technique.

1. Young people (16-18 years old) in the area where you live are increasingly becoming involved in the taking of illegal drugs. This has led to the increase in crime and violence.

2. The percentage of unemployed school-leavers has increased to 10%. This is causing a variety of problems, both for the individual and society.

3. Your faculty building is crumbling. The state budget for reconstruction has been cut. What can be done?

Where possible, apply the following rules:

- Identify the purpose
- Examine the biases
- Consider the implications of your options.

TYPES OF THINKING - LANGUAGE WORK

1. Think about the story of the money-lender, then put the verbs in brackets into the correct tense and finish the sentences. What would have happened?

   If the girl (not drop) the black pebble, ...........................................................

   If the girl (pick) a pebble from the money-bag, ...............................................

   If she (expose) the money-lender as a cheat, ..............................................

   If she (decide) to save her father from prison, ..............................................

   If she (not use) lateral thinking, her chances.............................................

2. Complete the following set phrases with one (different) word each.

   There’s a __________ of truth in every joke.
   Face the ______________ of being what you are, for that is what changes what you are.
   It goes without ________________ that you can improve your skills with practice.
   There’s no __________ without a fire.
   It’s better to be ___________ than sorry.
   Truth is stranger than ____________ .
   Think _____________ before you speak.
   I would not call him creative by any ______________ (of imagination).
3. Match the left-hand column with the expressions on the right to make meaningful structures.  
Note that more options are possible.

- to clash
- to strip
- to suspend
- to embark
- to challenge
- to run
- to prepare

<table>
<thead>
<tr>
<th>to clash</th>
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<td>to strip</td>
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<td>an argument of irrelevances</td>
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<td>to challenge</td>
<td>assumptions</td>
</tr>
<tr>
<td>to run</td>
<td>over a problem</td>
</tr>
<tr>
<td>to prepare</td>
<td>into difficulties</td>
</tr>
</tbody>
</table>

4. Match the boldfaced expressions in the box with the descriptions below.

<table>
<thead>
<tr>
<th>suggest</th>
<th>tentative</th>
<th>allegedly</th>
<th>indication</th>
<th>infer</th>
<th>estimate</th>
</tr>
</thead>
</table>

1) an adverb that introduces a statement that is said to be true but has not been proved __________
2) to try to judge the size, cost, speed of something etc __________
3) to show that something is likely to be true, to be a probable sign of something __________
4) not definite or certain, provisional and may be changed later __________
5) to form an opinion that sth is probably true because of information that you have __________
6) a sign that shows what is happening, what someone is thinking or what is true __________

5. Complete the adjectives.

- a VA _ _ D *(having a sound basis in logic or fact; reasonable,)* inference or argument
- a RE _ _ _ _ T *(able to withstand difficulties and rebound from them)* plan, character or system
- a PR _ _ _ _ D *(deep, strong)* shock, effect or insight
- a GE _ _ _ _ L *(the earliest)* stage of a process
- DI _ _ _ _ NT *(using a variety of premises as bases for inference)* thinking