Creative and Innovative Thinking Skills









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Creativity and Types of Innovation

What is Creativity?

Creativity

Bringing into existence an idea that is new to you

The practical application of creative ideas

Innovation

Creative Thinking

An innate talent that you were born with and a set of skills that can be learned, developed, and utilized in daily problem solving

What is Creativity?

Creative solutions are more than ideas - they must work in the real world. A creative solution has three attributes:

- It is new (otherwise it would not be creative).
- It is useful, in that it solves the problem (otherwise it would not be a solution).
- It is feasible, given the messy real world constraints like money and time.

Types of Innovation

- Business Model Innovation involves changing the way business is done in terms of capturing value e.g. HP vs.
 Dell, hub and spoke airlines vs. Southwest
- Process Innovation involves the implementation of a new or significantly improved production or delivery method.

Types of Innovation

- Product Innovation, involves the introduction of a new good or service that is new or substantially improved. This might include improvements in functional characteristics, technical abilities, ease of use, or any other dimension.
- Service Innovation, is similar to product innovation except that the innovation relates to services rather than to products

Don't Believe the Experts!

"That's an amazing invention, but who would ever want to use one of them?" (US President Rutherford B. Hayes, after participating in a trial telephone conversation between Washington and Philadelphia in 1876).

"Television won't be able to hold onto any market it captures after the first six months. People will soon get tired of staring into a box every night (Darryl F. Zanuck, Head of 20th Century Fox, 1946)

Don't Believe the Experts!

"The horse is here to stay, but the automobile is only a novelty, a fad" (President of Michigan Savings Bank, 1903, advising Henry Ford's lawyer not to invest in the Ford Motor Company – disregarding the advice, he invested \$ 5,000 in stock, which he sold several years later for \$ 12,5 million).

"I think there is a world market for about five computers (Thomas J. Watson Sr., Chairman of IBM, 1943)

Conceptual Blocks to Creativity

Blocks and Blockbusters to Creativity

Making assumptions

Checking assumptions

Following the rules

Breaking the rules

Blocks and Blockbusters to Creativity

Over-reliance on logic

Use imagination and intuition

Fear of failure

Risk-taking culture

Conceptual Blocks

Conceptual blocks

Mental obstacles that constrain the way the problem is defined and limit the number of alternative solutions thought to be relevant

Conceptual Blocks

The more formal education individuals have

The more experience they have in a job

The less able they are to solve problem in creative ways...

Conceptual Blocks

Formal education often produces...



"right answers", analytical rules, or thinking boundaries

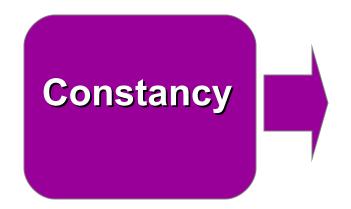
Experience in job teaches.....



proper ways of doing things, specialized knowledge, and rigid expectation of appropriate actions

Individuals
lose the ability
to experiment,
improvise, and
take mental
detours

Types of Conceptual Blocks



Vertical thinking

One thinking language



Distinguishing figure from ground

Artificial constraint

Types of Conceptual Blocks



Constancy

Vertical thinking

- Defining problem in only one way without considering alternative views
- Lateral thinkers, on the other hand, generate alternative ways of viewing a problem and produce multiple definitions

One thinking language

- Using only one language (e.g., words) to define and assess the problem
- Disregarding other language such as nonverbal or symbolic languages (e.g., mathematics), sensory imagery (smelling), feelings and emotions (fear, happiness) and visual imagery (mental pictures).

Compression

Distinguishing figure from ground

- Not filtering out irrelevant information or finding needed information
- The inability to separate the important from the unimportant, and to appropriately compress problems.

Artificial constraints

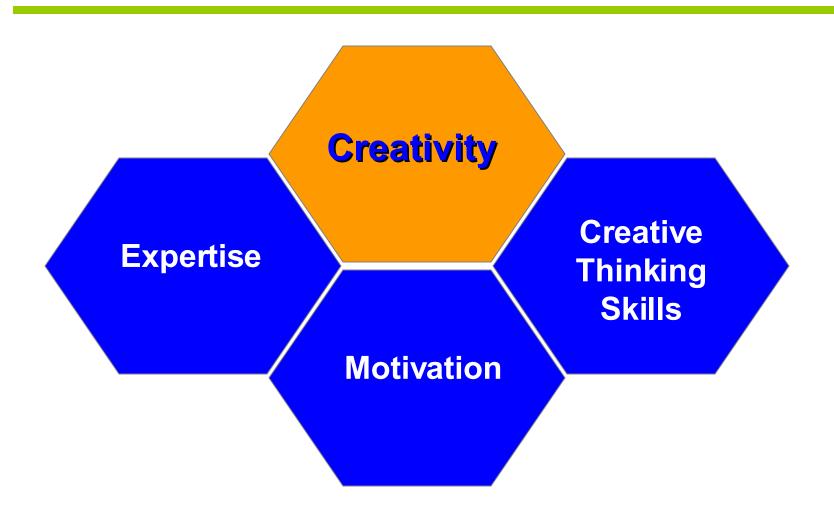
- Defining the boundaries of a problem too narrowly
- People assume that some problem definitions or alternative solutions are off-limits, so they ignore them.

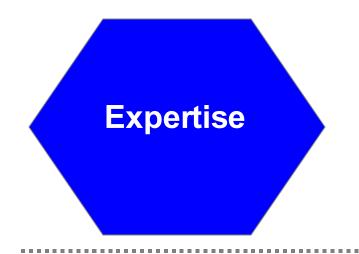
Complacency

Noninquisitiveness

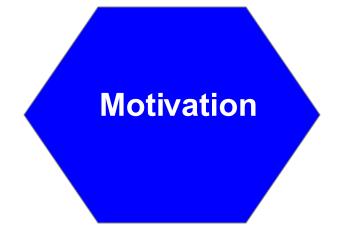
- Not asking questions
- Sometimes the inability to solve problems results from a reticence to ask questions, to obtain information, or to search for data.

Nonthinking An inclination to avoid doing mental work.





Expertise is, in a word, knowledge – technical, procedural, and intellectual

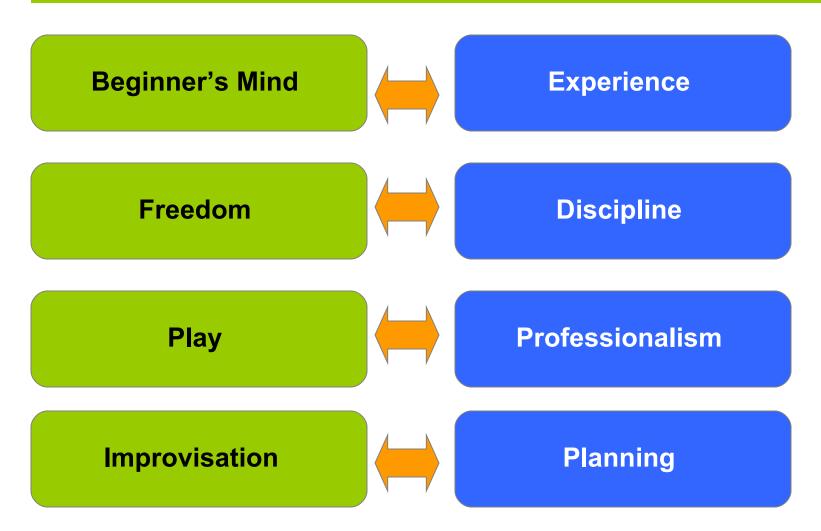


Not all motivation is created equal. An inner passion to solve the problem at hand leads to solutions far more creative than do external rewards, such as money.

Creative Thinking Skills

Creative thinking skills determine how flexible and imaginatively people approach problems.

The Paradoxical Characteristics of Creative Groups



Myths about Creativity

- 1. The smarter you are, the more creative you are
- 2. The young are more creative than the old
- 3. Creativity is reserved for the few the flamboyant risk takers
- 4. Creativity is a solitary act

5. You can't manage creativity

Tools for Defining Problems

Tools for Defining Problems

Tools for Defining Problems

Kipling Method

Problem Statement

Challenge Method

Kipling Method

Kipling Method

- Rudyard Kipling used a set of questions (5W + 1H) to help trigger ideas and solve problems
- One approach with this is to use the questions in a particular order to help guide you through a sequence of thought towards a complete answer, such as: What is the problem? Where is it happening? When is it happening? Why is it happening? How can you overcome this problem? Who do you need to get involved? When will you know you have solved the problem?

Kipling Method

Kipling Method

- Any questions work because we are conditioned to answer questions that we are asked. They challenge us and social rules say it is impolite not to reply.
- The Kipling questions work because they are short and direct. They are also largely general, and 'What' can be applied to many different situations, making them a flexible resource.

Problem Statement

Problem Statement

- When starting to solve a creative problem it is a good idea to define the problem you are trying to solve.
- Start by discussing the overall context and situation in which the creative activity is aimed.

Problem Statement

Problem Statement

- Write down more than one draft of the problem statement. Remember that defining the problem is almost a complete project in itself and you may benefit from going through iterative stages of convergence and divergence.
- Listen and write down everybody's opinion of what the problem really is. Find the points of agreement and then discuss the differences.

Problem Statement

Problem Statement

- Stating the problem may seem obvious, yet many creative efforts fail because the problem is either unclear or it is focused in the wrong place.
- The way you state a problem is half the problem and half the solution. Once you have identified a good problem statement, sometimes the solution is so obvious that you need little, if any, creative thought afterwards.

Challenge Method

Challenge Method

- Use it to force yourself or other people out of a thinking rut.
- Use it to test out ideas for validity.
- Use it to challenge the problem or situation you are considering when initially defining the problem.

Challenge Method

Challenge Method

- Select all or part of the problem domain that you are going to challenge. Perhaps it is something that has been particularly difficult to be creative around.
- Find something to challenge and question it deeply. You can challenge many things, including:
 - Concepts and broad ideas
 - Assumptions and beliefs that are not questioned

Challenge Method

Challenge Method

- Boundaries across which you do not yet cross
- 'Impossible' things that are assumed cannot happen
- 'Can't be done' things that are assumed cannot be done
- 'Essentials' things that you assume cannot be disposed of
- Sacred cows that cannot be challenged

Challenge Method

Challenge Method

- One way in which we deal with the complexity
 of the world is to make assumptions about
 many things. Our pattern-matching ability is a
 great help in allowing us to take short-cuts but it
 often ends up in us not noticing many things.
- If we do not take deliberate and conscious action, our subconscious will let many assumptions pass by unnoticed.

Tools for Creating New Ideas

Tools for Creating New Ideas

Tools for Creating New Ideas

Attribute Listing

Brainstorming

Visioning

- Use Attribute Listing when you have a situation that can be decomposed into attributes - which itself can be a usefully creative activity.
- Particularly useful with physical objects.
 You can use it elsewhere, too.
- Highly rational style. Suitable for people who prefer analytic approaches. Good for engineering-type situations.

- For the object or thing in question, list as many attributes as you can.
- It can also be useful to first break the object down into constituent parts and look at the attributes of each part in question.

- For each attribute, ask 'what does this give'?
 Seek the real value of each attribute. It is
 also possible that attributes have 'negative
 value' -- i.e.. they detract from the overall
 value of the object.
- Finally look for ways in which you can modify the attributes in some way. Thus you can increase value, decrease negative value or create new value.

- Attribute Listing works as a decompositional approach, breaking the problem down into smaller parts that can be examined individually.
- All things have attributes which are sometimes overlooked. By deliberately focusing on these, you can find new ways to be creative.

Brainstorming

Brainstorming

- Brainstorming is probably the best-known creative tool.
- It can be used in most groups, although you will probably have to remind them of the rules.
- It is best done using an independent facilitator who manages the process (so the group can focus on the creative task).
- Typically takes around 30 minutes to an hour.

Brainstorming

Brainstorming

- Brainstorming Rules :
 - No criticism or debate
 - Quantity over quality
 - Freewheel
 - Combine and improve

Brainstorming

Brainstorming

- Brainstorming works when people use each other's ideas to trigger their own thinking. Our minds are highly associative, and one thought easily triggers another.
- If we use the thoughts of others, then these will stop us getting trapped by our own thinking structures.

Visioning

Visioning

- A vision is a 'motivating view of the future'.
 It creates pull. It gives direction.
- Imagine brilliant and innovative future.
 Think about what you are trying to achieve.
- Go out into the future. Look around and see what is there.

Visioning

Visioning

- Use dynamic and emotive words to paint motivating pictures. Use words like 'sharp', 'now' and 'value'.
- Phrase it in the present tense to make it more immediate. Use 'is' rather than 'will'.
- Use active verbs that talk about what is happening.
- Test it with others to ensure it works for them too.

Visioning

Visioning

 Visioning works because we are an imaginative species and are motivated by what we perceive as a possible or desired future.

Creating a Creative Climate

Organizational Characteristics that Support Creativity and Innovation

Risk taking is acceptable to management

Employees have access to knowledge sources

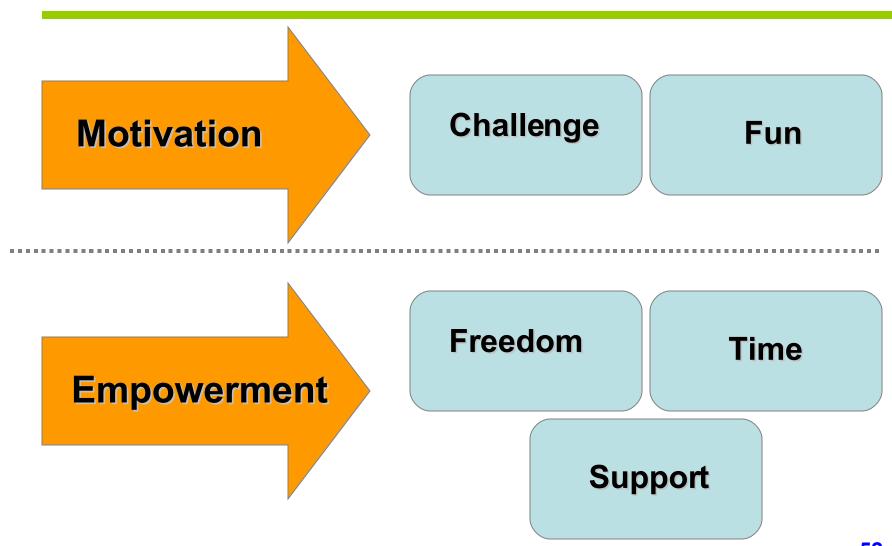
Innovators are rewarded

New ideas and new ways of doing things are welcomed

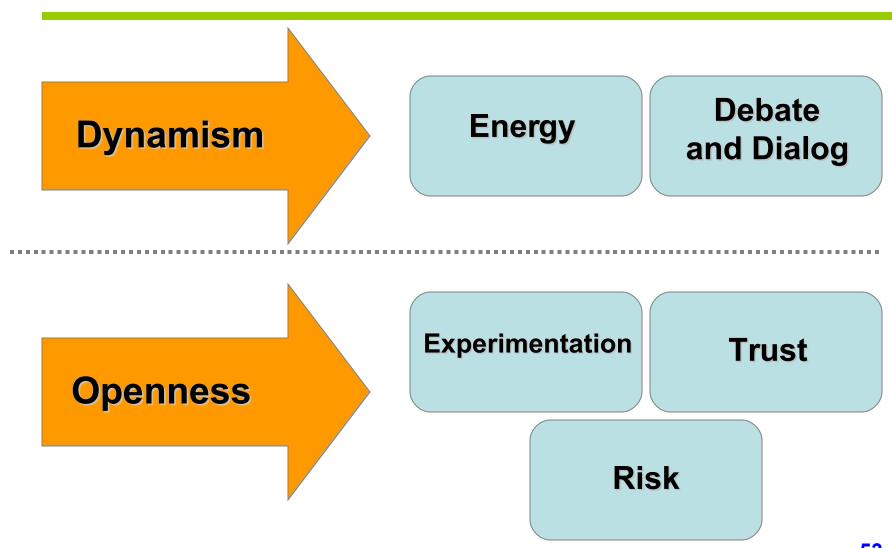
Information is free flowing

Good ideas are supported by executive patrons

Creating a Creative Climate



Creating a Creative Climate



Recommended Further Readings:

- David A. Whetten and Kim S. Cameron, Developing Management Skills, Harpers Collins Publisher
- 2. Floyd Hurt, Rousing Creativity, Crisp Publication
- 3. Carol K. Goman, *Creativity in Business*, Crisp Publication
- 4. www.creatingminds.org

End of Material