

Sharif University of Technology
Graduate School of Management & Economics

CREATIVITY & INNOVATION

Dr. S. Alireza Feyzbakhsh

Creativity, Innovation and Entrepreneurship

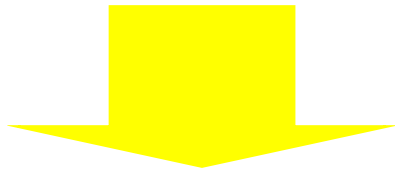
Creativity

Thinking new things



Innovation

Doing new things



Entrepreneurship

Creating value in
the market place

Creativity - a necessity for Survival



PARIS IN THE
THE SPRING TIME

Can creativity be Taught?

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Creative Thinking

Always ask "Is there a better way?"

Challenge custom, routine and tradition

See from a different perspective

Be reflective, deep in thought



More than one "right answer"

*See mistakes and failures
pit stops on the way to success*

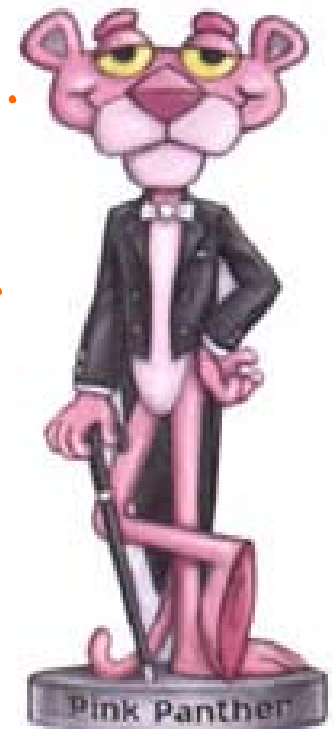
*Relate unrelated ideas to
generate innovative solutions*

Have "Helicopter skills"



Barriers to Creativity

1. Searching for the one "right" answer.
2. Focusing on "being logical".
3. Blindly following the rules.
4. Constantly being practical.
5. Viewing play as frivolous.



Barriers to Creativity (Continued)

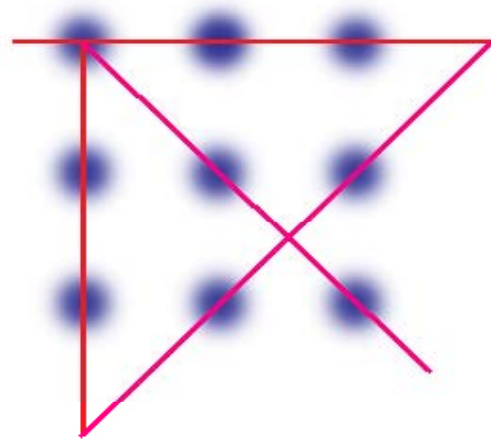
6. Becoming overly specialized.
7. Avoiding ambiguity.
8. Fearing looking foolish.
9. Fearing mistakes and failure.
10. Believing that "I'm not creative".





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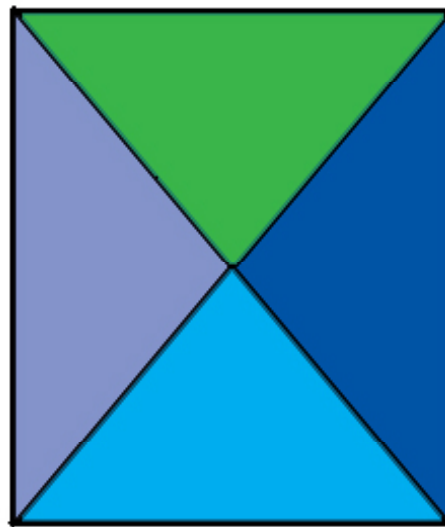
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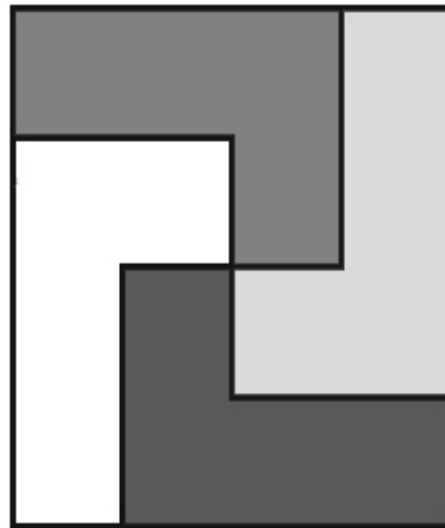
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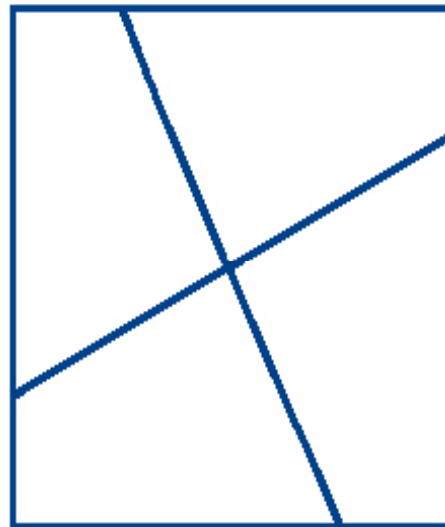
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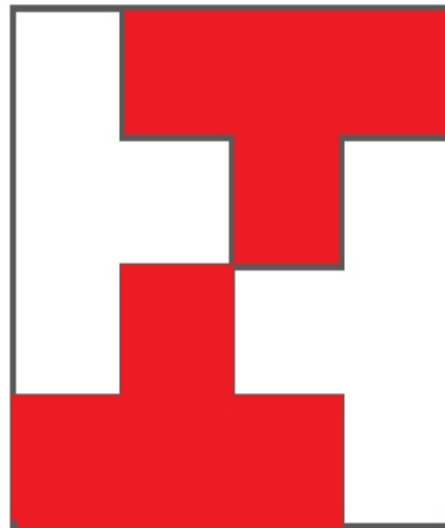
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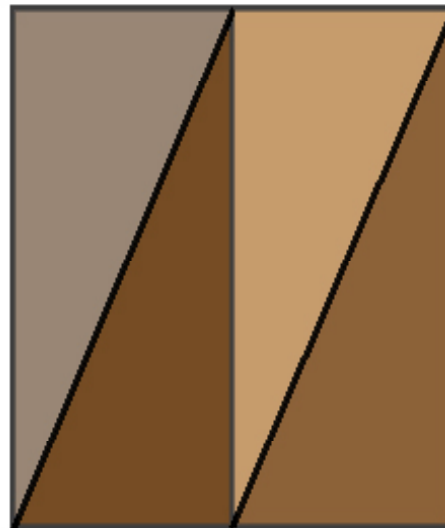
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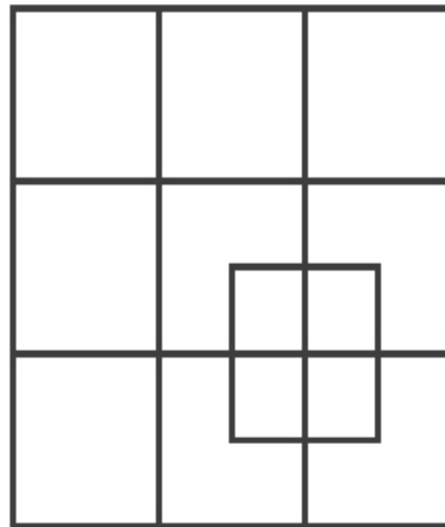
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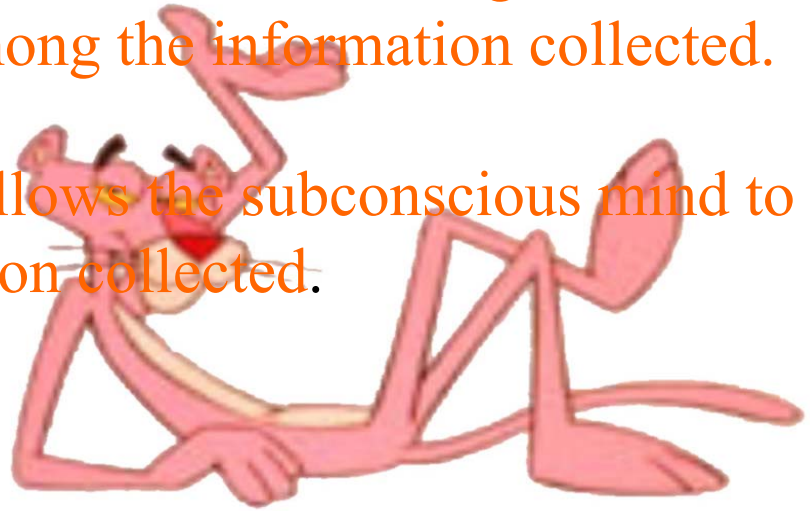
How to Enhance Creativity

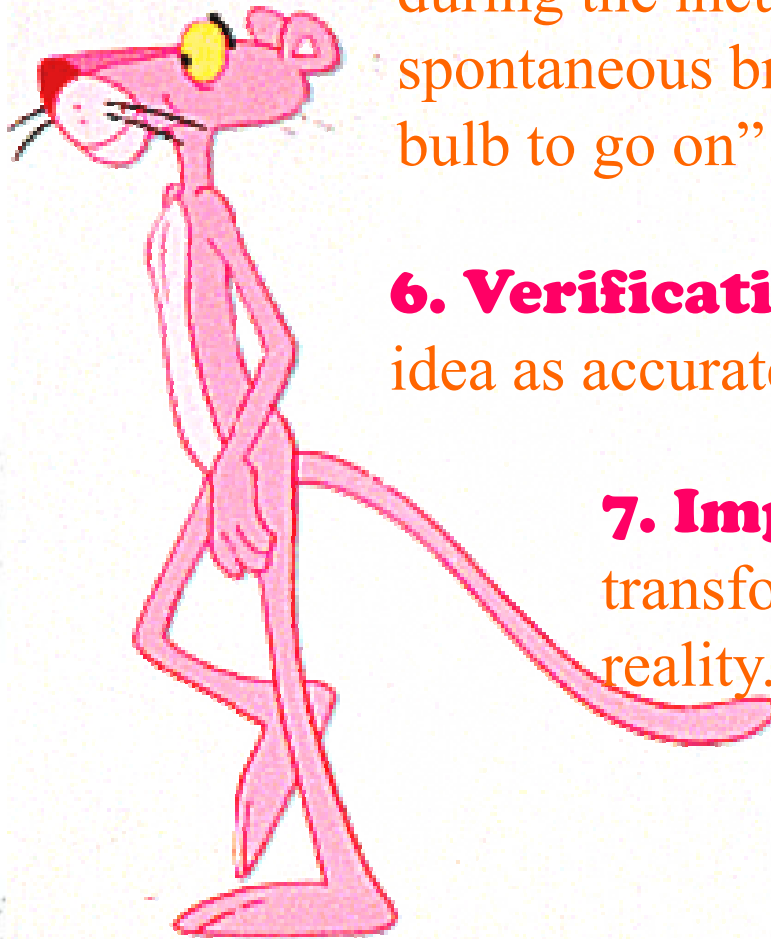


- Expecting creativity.
- Expecting and tolerating failure.
- Encouraging curiosity.
- Viewing problems as challenges.
- Providing creativity training.
- Providing support.
- Rewarding creativity.
- Modeling creativity.

The Creative Process

- 1. Preparation.** Involves getting the mind ready for creative thinking
- 2. Investigation.** Requires the individual to develop a solid understanding of the problem or decision.
- 3. Transformation.** Involves viewing the similarities and the difference among the information collected.
- 4. Incubation.** Allows the subconscious mind to reflect the information collected.





5. Illumination. Occurs at some point during the incubation stage when a spontaneous breakthrough causes “the light bulb to go on”

6. Verification. Involves validating the idea as accurate and useful.

7. Implementation. Involves transforming the idea into a business reality.

CREATIVE PROBLEM SOLVING

- **Brainstorming**
- **Reverse brainstorming**
- **Synectics**
- **Gordon method**
- **Checklist method**
- **Free association**
- **Forced relationships**
- **Collective notebook method**

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CREATIVE PROBLEM SOLVING

- Heuristic
- Scientific method
- Value analysis
- Attribute listing method
- Matrix charting
- Inspired (big-dream) approach
- Parameter analysis

PRODUCT PLANNING AND DEVELOPMENT PROCESS

- Idea stage
- Concept stage
- Product development stage
- Test marketing stage
- Commercialization

Major Innovation Myths

- Myth1

Innovation is planned and predictable

- Myth2

Technical specifications should be thoroughly prepared

- Myth3

Creativity relies on dreams and blue-sky ideas

Major Innovation Myths

- Myth4

Big projects will develop better innovations than smaller ones

- Myth5

Technology is the driver force of innovation and success

Sources of Innovation

- Unexpected occurrences
- Incongruities
- Process needs
- Industry and market changes
- Demographic changes
- Perceptual changes
- Knowledge-based concepts

Principles of Innovation

- Be action oriented
- Make the product ,process,or service Simple and understandable
- Make the product,process,or service Customer-based
- Start small
- Aim high
- Learn from failures
- Follow a milestone schedule
- Reward heroic activity
- Work,work,work

The Creative Climate

No enterprise will have creative owners and managers for long if the right climate is not established and nurtured

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The Role of Creativity

◀ *The generation of ideas that result in the improved efficiency or effectiveness of a system*

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INNOVATION

THE DREAMERS WHO DO

1. INNOVATION IN PROCESS INCLUDING CHANGES AND IMPROVEMENTS TO METHODS. INCREASING PRODUCTIVITY DECREASES COSTS, AND INCREASING DEMAND.
2. INNOVATION IN PRODUCTS OR SERVICES.

The Nature of Creative Process

- Everyone is creative but to some degree
- A great aptitude for creativity
- Educate & environment
- Taught to think & act creativity

Ways to generate creative ideas

- Keep an idea file or notebook
- Talk with people-network
- Read voraciously
- Try thinking in opposites
- Look for new uses for old things
- Brainstorm your way to a new idea
- Team with an inventor
- Look to the government