BASIC ENGINEERING DESIGN
Creative Thinking

GEN- N1003
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Lecture 6

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Creative Thinking & Decision Making I

Creative Thinking

Creative thinking refers to

- Generating alternatives
- Thinking of possibilities
- Creative problem solving
- Creating new ideas
- Using more of your potential

Sensitivity الحس

- Uses the **senses** to discover the world
- Asks, "**Why does this happen**?"
- "**How can I do this**?"
- Problem **finders** as well as problem **solvers**

Synergy = cooperation التآزر

- **Two or more elements** are **associated** in a new way and the result is **greater than the sum of the parts**
- Example: "Two heads are better than one."

Serendipity =chance/fate/destiny الصدفة

- Unexpected discoveries
- Lucky accidents

Tips for Creative Thinking

- Use the pressure of a time limit.
- Use a goal.
- Be relaxed.
- Suspend judgment.
- Focus your attention.
- Have fun with it.
- Use a different perspective.

Steps on boosting your creativity

- **Define your problem**. Grab a **sheet of paper, electronic notebook, computer or whatever** you use to make notes, and **define your problem in detail.** You'll probably find ideas positively jumping out once you've done this..

Steps on boosting your creativity

- **Read** as much as you can **about everything possible**. **Books exercise** your brain, **provide inspiration** and fill you with **information that allows you to make creative connections** easily.
- **Exercise your brain**. Brains, like **bodies**, need exercise to keep fit. If you don't exercise your brain, it will get flabby and useless.
- **Talking to clever people** and **disagreeing with people** - **arguing** can be a terrific way to give your brain cells a workout. But note, arguing about politics or film directors is good for you; but arguing about **who should clean the dishes** is not.

Exploring Creativity

- Consultants and researchers, have stressed the easiest way for people to be creative was **to think out-of-the-box**, to break their paradigms or mindsets, their ways of thinking.

In box thinking

Other box thinking

New box thinking

No box thinking

Exploring Creativity

In box

If we stay in our box we can examine what has **worked**?, what **hasn't worked**?, what **might work** ?

New box

It is a controlled form of **out-of-the-box thinking**
The difference between **vertical thinking (box)** and **lateral thinking (out-of-the-box, actually new box**) is that **vertical** thinking is comparable to **digging the same hole deeper** to find the treasure and **horizontal or lateral thinking** is digging **new holes in many locations** (new boxes).

Other box

It involves leaving yours and **entering someone else's** once again with the What's Good About It? philosophy. An example might be for the **creative department to send people to work in the finance, selling, shipping, manufacturing departments** to learn what the grass on the other side of the fence is really like in the other boxes

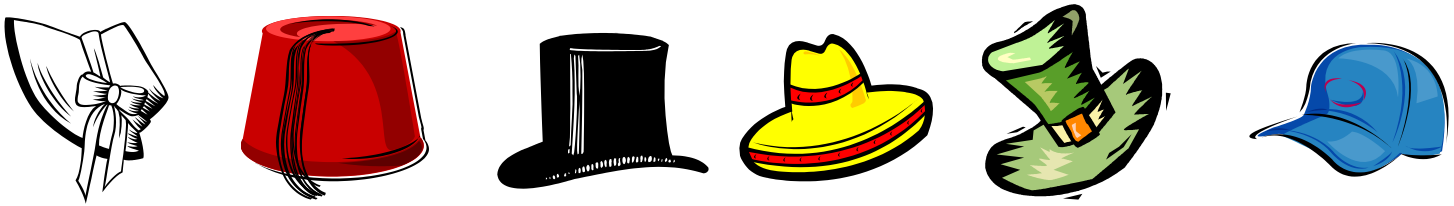
Exploring Creativity

No box

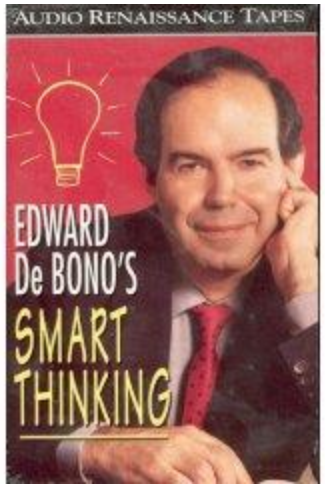
It might mean **complete open thinking with no limits** or **Virtual/Transparent-Box Thinking**. No-Box thinking challenges the greatest majority of people because of the many potential risks involved. Anything can be wrong at any time. There is **no box to provide any protection**. No fortress or castle walls.

Six Thinking Hats

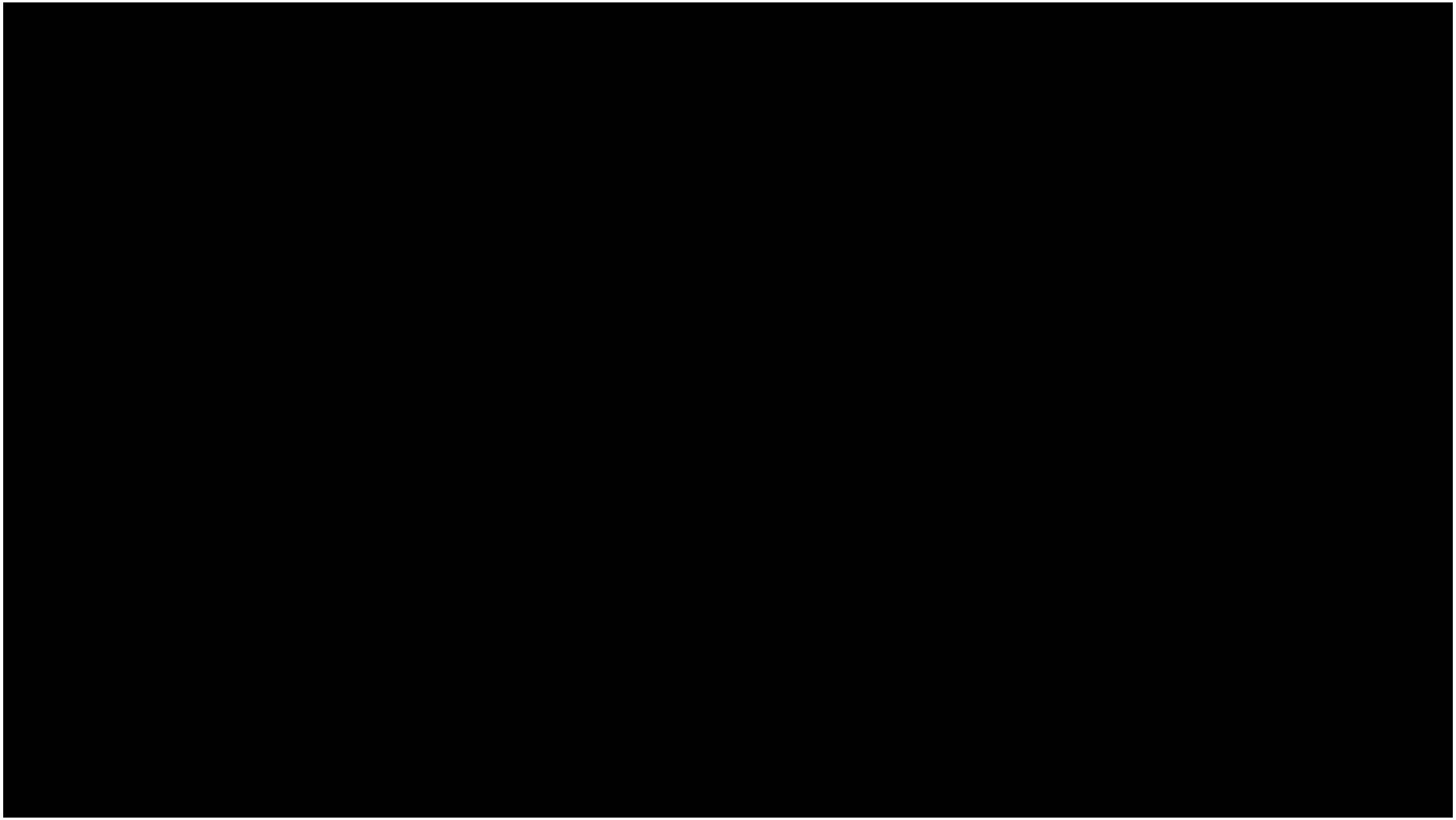
A framework for thinking



Early in the 1980s Edward de Bono invented the ***Six Thinking Hats*** **method. The method is a framework for thinking.**
It requires people to **extend their way of thinking about a topic** by wearing a range of different ’thinking‘ hats



	**With this thinking hat you focus on the data available. Look at the information you have, and see what you can learn from it. Look for gaps in your knowledge, and either try to fill them or take account of them.**
	**'Wearing' the red hat, you look at problems using intuition, gut reaction, and emotion. Also try to think how other people will react emotionally. Try to understand the responses of people who do not fully know your reasoning.**
	**Using black hat thinking, look at all the bad points of the decision. Look at it cautiously and defensively. Try to see why it might not work. This is important because it highlights the weak points in a plan. It allows you to eliminate them, alter them, or prepare contingency plans to counter them.**
	**The yellow hat helps you to think positively. It is the optimistic viewpoint that helps you to see all the benefits of the decision and the value in it. Yellow Hat thinking helps you to keep going when everything looks gloomy and difficult.**
	**•The Green Hat stands for creativity. 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. A whole range of creativity tools can help you here.**
	**The Blue Hat stands for process control. This is the hat 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.**



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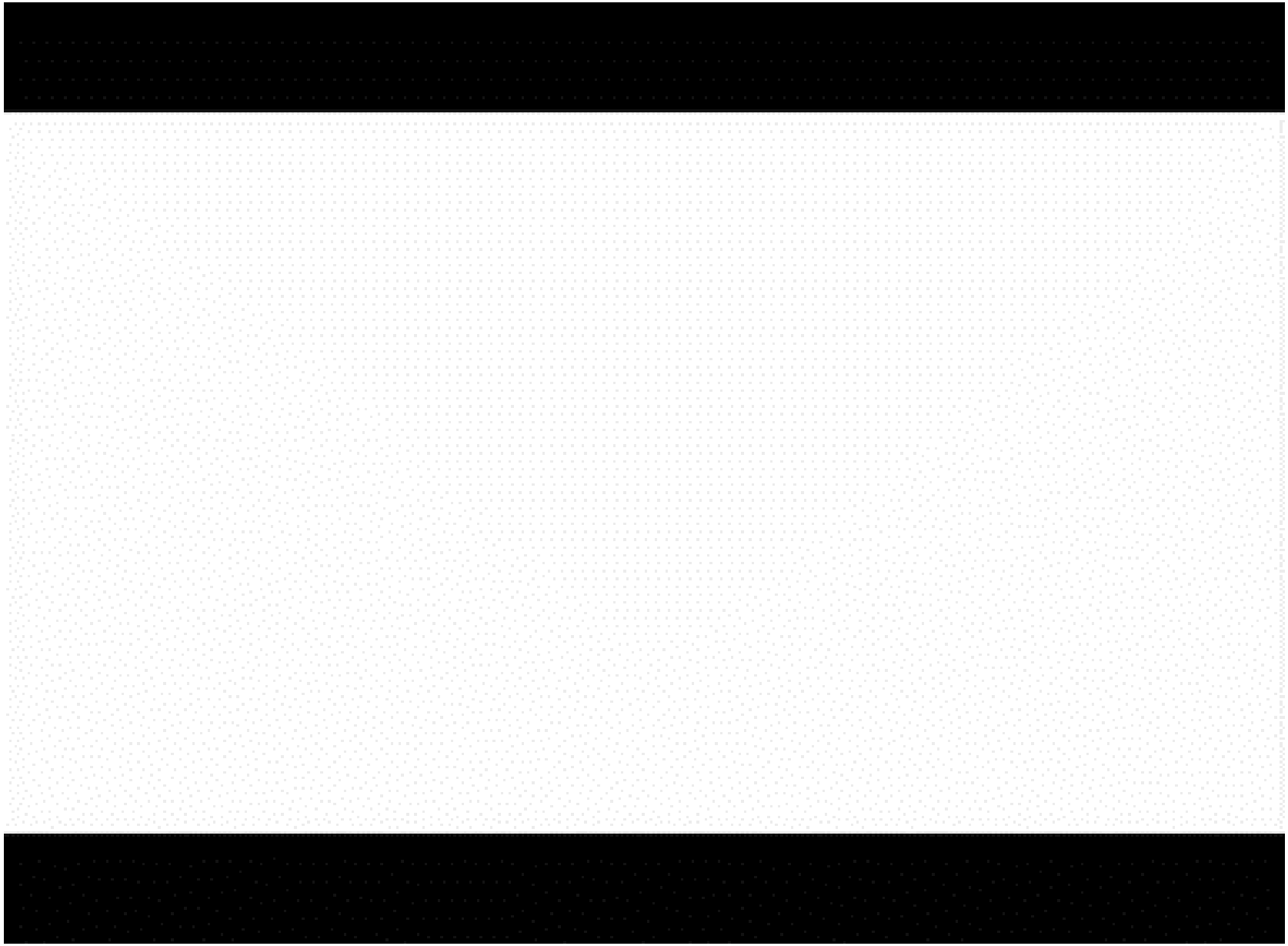

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How to use the hats

	? MANAGE
	? INFORMATION
	? EMOTION
	? CREATIVITY
	? NEGATIVES
	? BENEFITS