Surprising New Techniques to Improve Your Problem-Solving and Decision-Making

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Call for insights!

An article series in IEEE Software

Stories, case studies, experiences

More informal review process

Shepherds available for writing

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What is thinking?

Any Thinking or Decision-Making Happening Here?

Are there similarities in these two settings?

Sitting

Focused attention

Inside – no connection with Nature

Drab, probably noisy surroundings

Individuals probably tired, over-caffeinated

My goal: useful tips and techniques

Cognitive science is fast growing, uses controlled experiments, on-going re-testing, explosion in results

Our field is slow growing, few, if any controlled experiments (mostly anecdotes, case studies)

We should pay attention – it might help us do our work better ☺!

Move!

Blink, turn your head, move your eyes from side to side, look around, look outside

Lie down

Stand up – companies experimenting with stand-ups

Treadmill Desk
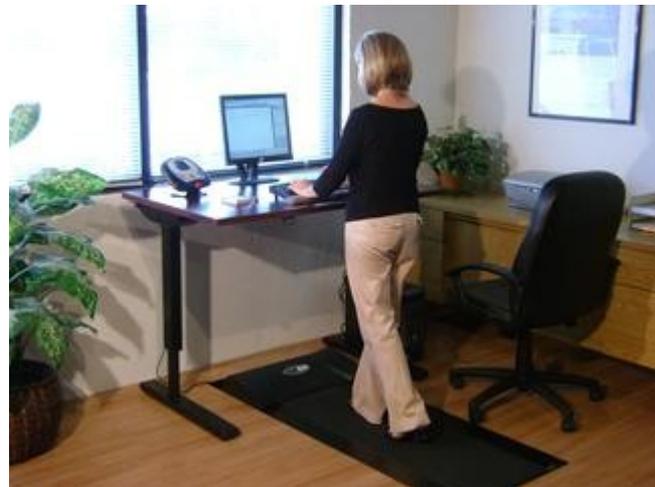
Take a Break

Bio break, coffee break (caffeine is the subject of another talk)

Walk – effective persuasion technique – walk sideways or backward

Take a nap (subject of another talk)

Work on a different hard problem - multi-tasking is ineffective (can you listen to two songs at the same time?) but shifting focus can help

Exercise, get enough sleep

When Arianna Huffington is looking for inspiration, she goes to sleep. "There are many, many great ideas locked inside of us," she says. "We just need to close our eyes to see them."

There are three nap rooms in the offices of the Huffington Post Media Group.

Do "Nothing"

When people constantly bombard their brains with digital input, they are forfeiting downtime that could allow them to better learn and remember information, or come up with new ideas.

Processing a barrage of information leaves people too fatigued to learn.

The brain needs downtime.

We think we're relaxing by distracting ourselves, but we're fatiguing our brains.

"My commute is my most productive creative time when I'm not focusing on anything."

Chris Cox, Facebook's Product Chief

Drink, Eat

Even mild dehydration affects the brain – always have water on hand – watch the caffeine

Decision-making requires energy, if tired and hungry people are forced to make decisions, they look for the easy way out – study of judges granting more favorable verdict after breaks

Distract the Loud Guy

The loud guy = Conscious mind - slow, linear, forgetful

The quiet guy = Unconscious - fast, can multi-task, knows everything, but is inaccessible

Keeping the conscious mind occupied on some other task allows the unconscious to get through to you
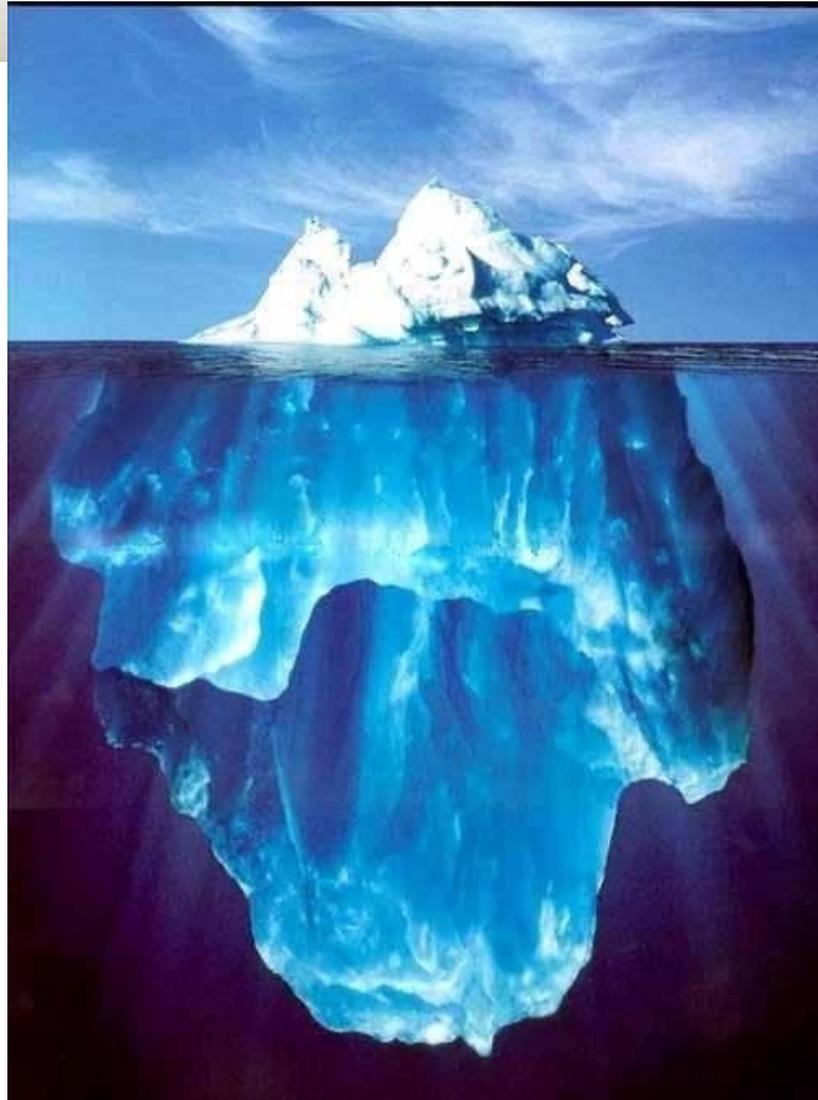
Nature Nurtures

Plants (must be the real thing, not photos or displays) improve innovative and creative thinking

Looking outside improves health

Walking outside, even for a few minutes, improves decision-making

Cardboard consultant

Explain the problem out loud to something or someone else – a stuffed animal, a photo, or another person who does not have to understand what you are talking about ☺!

Use this technique in meetings – have proposers of different solutions explain their version of the problem (not the solution!) to others

Write, Draw, Sketch

Typing is the least effective means for description

Writing by hand is useful for solving problems of all kinds

Drawing, sketching are also helpful – research shows that doodlers remember more information than note-takers – encourage doodling at meetings!

Doodle.com – the Doodle Revolution

WHAT IGNITES CREATIVE ENERGY?

CURIOSITY · WATCHING CHILDREN · MUSIC · FEAR OF FAILURE · DEADLINES!

DESIRE · REST · COFFEE! · PASSION · APPRECIATION

BOREDOM · WALKING · OBSTACLES · LOOKING OUT THE WINDOW · CONVERSATION

Happy people are more productive

Posture – sit up, both feet on the floor, arms open, pull work toward you, nod your head

Smile – research shows this to be as effective as anti-depressants ☺! Fake it!

Language – choose affirming words "like," "positive," find areas of agreement, "yes, and"

Be mindful of the environment

New research suggests that we are sensitive to our environment – sitting in a hard vs. soft chair or the weight of a document influences how "hard" or "weighty" we believe an issue to be

Temperature of the room or drinks influences how we feel about others around us.

Higher ceilings increases innovation. Lower ceiling concentrates on details.

Noisy environments are harmful.

Brainstorming

Brainstorming was "invented" in the 1940s and is intuitively appealing – we all get together and follow some simple rules to generate innovative ideas

Research shows that individuals working on their own produce a higher quantity/quality of ideas than those in groups and avoids "social loafing" and "groupthink"

Stressed people tend to conform more to social opinion.

Solomon Asch Experiment

Exhibit 1   Exhibit 2
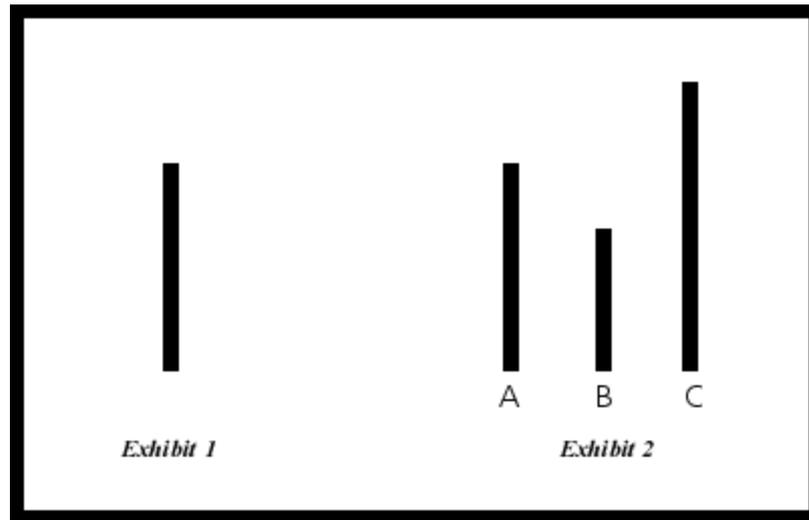
Small Steps

We have a sense that large, complex problems require large, complex solutions.

Organizations and software are examples of complex systems where the impact of any change is difficult to predict

The often-overlooked approach of Small Steps (it's a pattern!) is a better road to success where the result of each small experiment can be seen before the next step is taken.

Cutting edge suggestions

Intention questions – ask one another about a desired future behavior

Singing reduces stress and lowers blood pressure

Avoid buyer's remorse - hand washing - bring a sense of closure to the decision, don't continue to debate

Animals!

Research shows dogs in the workplace result in better collaboration within teams.

Try your own experiments

From *Fearless Change*:

- **Test the waters**
- **Time for Reflection**
- **Small Success**
- **Step by Step**

Thanks for listening!