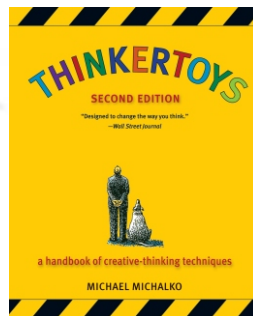




Thinkertoys

A Handbook of Creative-Thinking Techniques



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■ About the Author



Michael Michalko

Michael Michalko is a leading creativity expert who leads creative-thinking workshops, seminars, and think-tank sessions for clients around the world. His involvement in the field began when, as an officer in the U.S. Army, he organized an elite team of NATO intelligence specialists and academics to research, collect and categorize all known inventive-thinking methods. His team applied these methods to various military, intelligence and political problems and produced a variety of breakthrough ideas and creative solutions to new and old problems.

After leaving military service, Michael applied these creative-thinking techniques to problems in government and the corporate world with outstanding success, and his instruction, seminars, and creative-thinking workshops have proved highly popular with corporations, governments, and associations around the world. Some of these techniques were first made public in the best-selling *Thinkertoys: A Handbook of Business Creativity*.

Michael lives and works in the peaceful hamlet of Churchville, New York, with his wife, Anne, an accomplished artist, his dog, Percy, and his best friend, Jack the cat.

■ The Big Idea

In hindsight, every great idea seems obvious. The idea itself is a simple thing. The process of generating the idea, however, is what can be both tough and circuitous. How then can you make yourself capable of coming up with noteworthy ideas?

This book reveals creative-thinking techniques for approaching and solving problems in unconventional and thought-provoking ways. In addition, it also teaches you to create original ideas to improve both your personal and business lives.

■ Why You Need This Book

People's business attitudes determine their potential for innovation, creativity, success in their chosen fields and even genius. This book is most useful for people who know that they need to develop out-of-the-box thinking skills to solve problems, but who don't know where to start. More importantly, this book also provides tools to allow people to work on themselves to develop their business creativity and make themselves into the sort of people who can come up with innovative ideas.

The book provides specific hands-on techniques for coming up with big or small ideas to make money, solve problems, beat the competition, further your career, and any and all of those sorts of objectives.

■ A Bit of an Introduction

Creativity is not an accident or something that's genetically determined. It's a consequence of an intention to be creative and a corresponding determination to learn and use creative-thinking strategies.

The techniques discussed in this book are divided into linear techniques, which allow for the manipulation of information to generate new ideas, and intuitive techniques, which show you how to find ideas by using intuition and imagination. It is not enough to simply read the book. To actually create your own ideas, you have to put the techniques to actual use; merely reading the ideas will only go so far as to give you a suggestion of how to use them, and no more.

■ Original Spin and Mind Pumping

Before using the techniques in this book, you need first to overcome your fears, doubts and uncertainties about being creative. This is extremely significant: when you feel you are creative, your ideas are quite different than when you feel you are not.

Believe that you are capable of doing your share and exerting a certain amount of independence. You must also believe that there is something inside you that makes you equal to the rest of the world, talent- and ability-wise do not belittle yourself.

You can try the following simple exercises to overcome your doubts:

- **Tick-tock.** Write out your fears, confront them head-on by examining the negatives and learn how you are irrationally twisting things and blowing them

out of proportion, and substitute positive factors for the negative ones.

- **Self-affirmation.** Recognize and remember your successes, your good qualities and characteristics; forget your failures.

- **Creative affirmation.** Write down several different affirmations that state that you are creative. Take one of these affirmations and write twenty variations of it. Write negative thoughts on a different piece of paper or the other side of the sheet you're using. Write additional, specific affirmations to counter these negatives. Repeat the process daily for five days.

Exercises to 'pump your mind' and encourage you to behave like an idea person:

1. Idea Quota. Set an idea quota for each challenge you are working on, such as three new ideas daily for a week.
2. Get tone. Pay attention to what's happening around you.
3. Don't be a duke of habit. These are people who are slaves to their routines and are thus limited problem-solvers.
4. Feed your head. Read to feed your mind new information and ideas
5. Do a content analysis. Try to discern new trends in advertising and marketing by scanning junk mail before discarding it, reading local newspapers and shopping news giveaways, observing pop culture, listening to different radio stations and the like.
6. Make a brain bank. Collect interesting ads, quotes, designs, ideas and the like that might trigger ideas by association.
7. Be a travel junkie. Go around, pick up something at random and create connections and relationships in your mind with the object.
8. Capture your thoughts. If you think it, write it memory doesn't always serve.
9. Think right. Work to make your thinking more fluent and flexible.
10. Keep an idea log. Capture your ideas to see how they might be related to different areas of your life and review them periodically.

■ Identify your challenges

If you try to come up with new ideas without a specific goal, you could consume a lot of time with no purpose. You first need to know what your goal is first things first. You need to come up with a "challenge statement."

Here are the steps to do so:

1. Write it as a definite question, beginning with "In what ways might I...?"
2. Vary the wording of the challenge by substituting synonyms for key words.
3. Stretch the challenge to see the broader perspective, see all the possible solutions and select the best route to your goal.
4. Squeeze the challenge to see the narrow perspective make your problem-solving easier by limiting the area in which problem-solving occurs. Ask who, what, where, when, why and how.
 - a. Divide it into sub-problems based on these questions.

- b. Solve the sub-problems.
- c. Keep asking “how else?” and “why else?” Go one step further.

■ Now on to the Thinkertoys!

Some guidelines:

- Thinkertoys are concrete techniques that help one become an active thinker.
- This book discusses two sorts of Thinkertoys: linear Thinkertoys and intuitive ones, for left-brained and right-brained thinkers respectively.
 1. Linear Thinkertoys structure existing information.
 2. Intuitive Thinkertoys generate new information using insight, imagination and intuition.

Some ways to use these tools:

- 1. Work with one particular Thinkertoy at a time; use it over and over again until you are familiar with the technique.
- 2. Select one linear and one intuitive Thinkertoy to stimulate both sides of the brain.
- 3. Select a Thinkertoy at random.

The toys can generate so many good ideas; here are some further guidelines about how to sort through and judge them.

1. Inventory the ideas in the sequence they occurred.
2. Browse through the list and prioritize the ideas.
3. Develop criteria for judging the ideas. You might want to think about determining their strengths or weaknesses, or essential, desirable or optional criteria.
4. Use judgment and intuition to choose the best ones.
5. Take the best ideas and get feedback.

■ Linear Thinkertoys

False Faces

Technique: Reversal

Profile: How to find ideas by reversing conventional assumptions even if they seem so basic, so fundamental, that they don't seem as if they can be challenged.

Process:

- State your challenge.
- List your assumptions.
- Challenge your fundamental assumptions.
- Reverse each one by writing down its exact opposite.
- Record differing viewpoints that might prove useful.
- Ask yourself how to accomplish each reversal.

Slice and Dice

Technique: Attribute listing. Attributes can be descriptive (substance, structure, etc.), process (marketing, manufacturing, selling, etc.), social (responsibilities, politics, etc.), price (cost to manufacturer, wholesaler, etc.)

Profile: How to get new ideas from a challenge's attributes. "Slice and dice" challenges into separate, simple attributes and deal with them individually.

Process:

- State your challenge.
- Analyze the challenge and list as many attributes as you can.
- Take each attribute one at a time and try to think of ways to change or improve it. Ask "How else can this be accomplished?" and "Why does this have to be this way?".
- Strive to make your thinking fluent and flexible.

Cherry Split

Technique: Fractionation

Profile: How to get ideas by dividing a challenge into two or more components and then reassembling them in different ways.

Process:

- State the essence of your challenge in two words.
- Split the challenge into two separate units. (If, say, we were dealing with cherry picking, analyze 'cherry' and 'picking' separately split each up into separate attributes, as discussed above.)
- Split each attribute into two more attributes.
- Continue to split each attribute until you feel you have enough to work with.
- Examine each attribute for ideas.
- Try to reassemble each attribute mix and match, find new combinations to create new ideas.

Think Bubbles

Technique: Mind mapping

Profile: How to map your thoughts to spark new ideas.

Process: When you are caught with a challenge that defies solution, map out your impressions and thoughts about it. Study it some ideas should come to light.

- Organization present the map of think bubbles as simply or as complex as you prefer. Use whatever materials you think best.
- Key words concentrate only on expressing essentials and the associations your mind thinks of.
- Association make connections, links and relationships between seemingly isolated and unconnected pieces of information.
- Clustering the map's organization comes close to the way our minds cluster concepts, making the mapped information more accessible to the brain.
- Conscious involvement to make the map, you have to concentrate on your challenge you end up having to group and regroup concepts, which often

provokes new ideas.

Scamper

Technique: Questions

Profile: How to manipulate what exists into something different.

Process: 'Scamper' is actually a collection of nine different techniques to transform an object, service or process into something new to spur ideas:

- Substitute something. (What procedure or whatever it is can I substitute for the current one?)
- Combine it with something else. (Create ideas by combining unrelated ideas.)
- Adapt something to it. (What can I adapt or copy from someone else?)
- Modify or Magnify it.
- Put it to some other use.
- Eliminate something. (What can I remove from it or stop doing?)
- Reverse or Rearrange it.

Tug-of-War

Technique: Force field analysis

Profile: How to graph a challenge's positive and negative forces, and maximize the positives and minimize negatives. You must be aware of the positive and negative forces operating in a challenge before trying to come up with a strategy to solve it.

Process:

- Write the challenge you are trying to solve.
- Describe the best- and worst-case scenarios that could ensue.
- List the conditions of the situation (whatever requirements you perceive as essential to solving a particular challenge).
- Note the "tug-of-war." Through listing these conditions you will be able to determine which forces are pulling you towards the best- and the worst-case scenarios. Think of what you need to do to make the best-case scenario take place.

Idea Box

Technique: Morphological analysis

Profile: How to identify and box the parameters of a challenge to quickly produce thousands of new ideas. (Parameter here means characteristic, factor, variable or aspect)

Process:

- Specify your challenge.
- Select the parameters of the challenge by asking if the challenge would still exist without each individual potential parameter.
- List variations, however many you wish for each parameter. The number of parameters and variations will determine the box's complexity.

- Try different combinations of parameters and variations to create entirely new forms.

Idea Grid

Technique: FCB (Foote, Cone and Belding) grid, which allow us a look at the separate events that make up the business universe and, based on that, an understanding of their relationships.

Profile: How to find new ideas and creative strategies using a grid to organize complex masses of information.

Process: The grid has four areas:

- High involvement: perceptions of expensive products such as cars and boats
- Low involvement: less costly products such as household goods
- Think: products for which consumers desire information and data, such as computers and cameras.
- Feel: products appealing to consumers' emotional needs and desires, such as travel and cosmetics.

Products are placed on the grid based on research done on both the product and its potential market. The grid makes it easy to locate the holes in a market, industry or business and thus new ideas and strategies can easily be created.

Lotus Blossom

Technique: Diagramming

Profile: How to diagram obstacles and then use them to reach your goal. A Lotus Blossom diagram is a cluster of themes around a central idea that are figuratively peeled back one at a time until a key component or sub-theme is discovered.

Process:

- Draw a Lotus Blossom diagram and write the problem or idea at the center.
- Write the significant components or themes of your subject in the circles surrounding the center circle.
- Use the ideas written in the circles as the central themes for the surrounding boxes.
- Continue the process until the diagram is completed.

Phoenix

Technique: Questions

Profile: How to use a checklist of problem-solving questions to guide thinking.

Process:

- Write your challenge.
- Use the Phoenix checklist to dissect the challenge into as many different ways as you can.
 - Why is it necessary to solve the problem?
 - What benefits will you gain by solving the problem?

- What is the unknown?
 - What is it you don't yet understand?
 - What is the information you have?
 - What isn't the problem?
 - Is the information sufficient? Insufficient? Redundant? Contradictory?
 - Should you draw a diagram of the problem? A figure?
 - Where are the boundaries of the problem?
 - Can you separate the various parts of the problem? Can you write them down? What are the relationships of the various parts of the problem?
 - What are the constants (things that can't be changed) of the problem?
- Record your answers.

The Great Transpacific Airline and Storm Door Company

Technique: Matrix

Profile: How to create a key-word index and mix and match the key words in a matrix to produce new ideas.

Process:

- Ask “What is our business?” and “What should our business be?”
- Define and organize the business according to variables: products or services, markets, functions and technologies.
- Under each variable, list the keywords for the business. For instance, under 'products' you could select 'hardback books, paperback books, floppy disks, cassettes, electronic networks'.
- Mix and match products, markets, functions, services and technologies to produce new ideas.

Future Fruit

Technique: Future scenarios

Profile: How to project a future scenario in order to take advantage of unexpected opportunities.

Process:

- Identify a particular problem in your business.
- State a particular decision that has to be made.
- Identify the forces (economic, technological, product lines, competition, etc.) that have an impact on the decision.
- Construct four or five future scenarios based on the principal forces.
- Develop the scenarios into stories or narratives by varying the forces that impact the decision.
- Search for business opportunities within each scenario.

Brutethink

Technique: Random stimulation

Profile: Forces a connection between two dissimilar concepts to create a new idea.

Process: When you are looking for a fresh approach to a challenge, bring in a random word—a word not selected for any relevance to the stated challenge and force. Random words will spark fresh ideas in a person's mind; think of a variety of things associated with your chosen word; force connections, as many as possible, to spark new ideas.

Hall of Fame

Technique: Forced connection

Profile: Produces ideas and insights by creating a relationship between your challenge and the words and thoughts of the world's greatest thinkers.

Process: Create a personal Hall of Fame—select people who, living or dead, appeal to you for whatever reason; consult the Hall when you have a challenge. Select one of these people and choose a favorite quotation; ponder the quotation. Write down your thoughts, regardless of appropriateness to the challenge; choose the thought or combination holding the most promise. Then restate it; give yourself five or ten minutes to come up with new ideas.

Circle of Opportunity

Technique: Forced connection

Profile: Generates ideas by forcing a connective link between common attributes and your challenge.

Process: State the challenge you want to solve; draw a circle and number it like a clock (1 to 12); select any 12 common attributes (aspects) specific to your challenge; throw a die to choose the first attribute to focus on; throw two dice to choose the second attribute; consider the attributes both separately and combined; free-associate (start with your first idea and keep making connections until another idea is triggered) about the individual attributes and the connection; search for a link between your associations and your challenge.

Ideatoons

Technique: Pattern language

Profile: A way to get ideas by using abstract symbols instead of words.

Process: Divide your challenge into attributes; describe each attribute by drawing an abstract graphic symbol on file cards; place all the cards on a table with the graphic symbols facing up; look for ideas and thoughts you can link to your challenge. Group the symbols randomly into various relationships; if stuck, you can try to add other Ideatoons—or even start over.

Clever Trevor

Technique: Talk to a stranger

Profile: How to get ideas by increasing the number and kind of people you talk to about your challenges.

Process: Talk to someone outside your field and from an entirely different background—the more casual the relationship the better; you want a unique perspective. Seek out idea-oriented people who are creatively alert. Draw out the creativity in people you meet casually. Learn to listen.

■ Intuitive Thinkertoys

Chilling Out

Technique: Relaxation

Profile: Relaxation techniques designed to clear the mind.

Process: Alpha waves are promoted by four simple things: A quiet environment, whether indoors or outdoors; a specific mental technique for relaxation; a passive attitude empty your mind, do not dwell on thoughts; a comfortable position, one that will allow you to meditate without sleeping.

Blue Roses

Technique: Intuition

Profile: Ways to use intuition and how to develop it.

Process: The two basic principles of intuition are as follows: It must be developed practice intuitive skills by making guesses before a situation is analyzed; plus it must be combined with reason.

The Three B's

Technique: Incubation many great discoveries were made in the bus, bed or bath.

Profile: Describes incubation and demonstrates how to use it.

Process: Identify a challenge worth working on; prepare by collecting important information about it; instruct your brain to find the solution to the problem; incubate let your brain think of the solution. An insight will occur.

Rattlesnakes and Roses

Technique: Analogies

Profile: How to use personal, direct, symbolic and fantasy analogies to originate ideas.

Process: State the challenge; choose a key word or phrase; choose a parallel or distant field different from yours; list images you associate with the chosen field; look for similarities and connections between these components.

Stone Soup

Technique: Fantasy questions

Profile: Coaches you to direct your imagination with fantasy questions and how to use the fantasies to generate ideas.

Process: Stipulate the challenge; list as many 'what if' scenarios as you can; try to answer the questions posed by the scenarios.

True and False

Technique: Paradox

Profile: Imagining two opposites or contradictory ideas existing simultaneously

Process: Identify the problem; convert the problem into a paradox (imagine the problem and its opposite existing at the same time); capture the essence of the

problem; use an equivalent of this feature to trigger new insights; develop a new idea based on this.

Dreamscape

Technique: Dreams

Profile: How to capture the ideas in your dreams.

Process: Formulate a question about your challenge and repeat it to yourself before you sleep; try to wake up earlier than you normally would so you can recall your dream; record the dream in a journal; free-associate from one or two dream images; keep the diary current.

Da Vinci's Technique

Technique: Drawing

Profile: How to use freehand scribbling, doodling and drawing to inspire ideas.

Process: Review a challenge you are working on; allow your intuition to offer images, scenes and symbols that represent your situation; draw as your mind wants to draw (as many drawings as you need); examine your drawing and write down what comes to mind (first words, then a paragraph).

Dali's Technique

Technique: Hypnogogic imagery, which produces autonomous inner imagery that can be captured right before one sleeps.

Profile: How to originate surrealistic imagery, and how to find the associative link between the images and your challenge.

Process: Think about your challenge; totally relax your body and quiet your mind and eyes; become completely helpless and directionless without falling asleep; record experiences immediately after they occur; look for the associative link.

Not Kansas

Technique: Imagery

Profile: How to direct your imagination with guided imagery scenarios to find ideas in unlikely places.

Process: Relax; ask your unconscious for an answer to the challenge; take a guided imagery journey; accept whatever messages emerge and record them faithfully and immediately; replace confusing images with clearer ones; look for qualities, relationships and clues.

The Shadow

Technique: Psychosynthesis

Profile: How to create your own spiritual adviser to help you solve your challenges.

Process: Let go of tension; imagine that you are surrounded by soft white light; next, imagine you are walking into a favorite place and that a spiritual mentor is walking towards you; have a brief dialogue with this mentor.

The Book of the Dead

Technique: Hieroglyphics

Profile: How to find ideas in the hieroglyphics from the Egyptian Book of the Dead.

Process: Write out the challenge you want to solve; choose one of the three sets of hieroglyphics; scan the illustration and write out the challenge again; empty your mind of distractions and concentrate on the challenge; open your eyes and 'translate' each line of the hieroglyphics, imagining that the Book was written to help you with your specific challenge; free-associate from each hieroglyphic; write out interpretations.

■ Group activities

It can be hard for groups to willingly discipline themselves to brainstorm ideas openly and productively.

- During warming up exercises, it must be remembered that a need for control is what freezes thinking and what prevents the free play of thought in brainstorming sessions. Participants should forget control, relax and have fun with thought.
- Those organizing brainstorming sessions must take care not to create an inhibiting environment that restricts creative thought. Sessions can also be undercut by group uniformity pressures and perceived threats from managers and bosses, and because of personality differences some people are naturally silent while others are naturally talkative.
- Raw creative-thinking techniques are very important they are designed to remove the constraints of logic and free participants' imaginations to be creative again.

■ Endtoys

Murder Board

Feedback is absolutely essential to the nurturing and critical development of ideas. A Murder Board is composed of a special group of selected individuals that evaluates and criticizes ideas before they're presented for final approval and implementation. It critiques ideas as harshly as possible, ensuring that only the best go out.

- Verbalize your idea to a trusted friend or your significant other. You need someone who you can trust will tell you only the truth.
- Detail your idea in writing and ask others to look at it.
- Appoint a Murder Board of your own to go over your idea/s.