

# How to Think Like Leonardo da Vinci

By Michael J. Gelb

## Book Notes and Outline

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*Leonardo Da Vinci is recognized as one of the greatest geniuses of all time. He excelled in many and varied areas like art, mathematics, architecture, philosophy, military planning etc. His accomplishments and life has been studied by many and continues to inspire thinkers from all walks of life.*

*Part 1 of the book is short review of Renaissance and its parallel with our time and brief biographical sketch of Leonardo da Vinci including summary of his major accomplishments. Genius of Leonardo is brought out very well in summary of his accomplishments.*

*Here are some Quotes and Notes from Introduction:*

“Your Brain is much better than you think”

Although it is hard to overstate Leonardo da Vinci’s brilliance, recent scientific research reveals that you probably underestimate your own capabilities. You are gifted with virtually unlimited personal potential for learning and creativity.

What happens to your brain as you get older? Many people assume that mental and physical abilities necessarily decline with age; that we are, after age twenty five, losing significant brain capacity on a daily basis. Actually, the average brain can improve with age. Our neurons are capable of making increasingly complex new connections throughout our lives. And, our neuronal endowment is so great that, even if we lost a thousand brain cells everyday for the rest of our lives, it would still be less than 1 percent of our total (of course, it’s important not to lose the 1 percent that you actually use!).

Baby ducks learn to survive by imitating their mothers. Learning through imitation is fundamental to many species, including humans. As we become adults, we have unique advantage: we can choose whom and what to imitate.

*Part 2 is the heart of the book: the discussion of the seven Da Vincian Principles. These principles are drawn from an intensive study of the man and his methods. The Seven Principles discussed are:*

1. **Curiosita:** An insatiably curious approach to life and an unrelenting quest for continuous learning.
2. **Dimostrazione:** A commitment to test knowledge through experience, persistence, and willingness to learn from mistakes.
3. **Sensazione:** The continual refinement of the senses, especially sight, as the means to enliven experience.
4. **Sfumato:** A willingness to embrace ambiguity, paradox, and uncertainty.
5. **Arte/Scienza:** The development of the balance between science and art, logic and imagination. “Whole-brain” thinking.
6. **Corporalita:** The cultivation of grace, ambidexterity, fitness, and poise.
7. **Connessione:** A recognition of and appreciation for the interconnectedness of all things and phenomena. Systems thinking.

*Here are some notes from the heart of the book:*

## **Curiosita**

All of us come into the world curious. We've all got it; the challenge is using and developing it for our own benefit.

Leonardo's inquisitiveness was not limited to his formal studies; it informed and enhanced his daily experience of world around him.

Da Vinci studied everything with same rigor.

Great minds go on asking confounding questions with the same intensity throughout their lives. Leonardo's childlike sense of wonder and insatiable curiosity, his breadth and depth of interest, and his willingness to question accepted knowledge never abated. Curiosita fueled the wellspring of his genius throughout his adult life.

By cultivating a Da Vinci - like open, questioning frame of mind, we broaden our universe and improve our ability to travel through it.

First take self assessment of present level of Curiosita.

**Keep a Journal or "Notebook".** Leonardo da Vinci carried a notebook with him at all times so that he could jot down ideas, impressions, and observations as they occurred. His notebooks contained jokes and fables, the observations and thoughts of scholars he admired, personal financial records, letters, reflections of domestic problem, philosophical musings and prophecies, plans for inventions, and treatises on anatomy, botany, geology, flight, water, and painting.

He was too busy searching for truth and beauty. For Da Vinci, the process of recording questions, observations, and ideas was of great importance.

Busy lives and job responsibilities tend to drive us toward hard conclusions and measurable results, but the exploratory, free flowing, unfinished, nonjudgmental practice of keeping a Da Vincian notebook encourages freedom of thought and expansion of perspective. In the manner of maestro, don't worry about the order and logical flow, just record.

Book discusses several techniques like generating top hundred questions, key themes, finding the right questions by asking What? When? Why? Where? Who? and How? and contemplate on question.

**Fill your notebook with questions, observations, contemplations, notes, pictures, drawings etc covering as many topics as you can.**

## **Dimostrazione**

The finest teachers know that experience is the source of wisdom. And the principle of Dimostrazione is the key to making the most of your experience.

He viewed the work of others as "proxy experience" to be studied carefully and critically and ultimately to be tested through his own experience.

Leonardo saw how preconceptions and “bookish prejudices” limited scientific inquiry. He knew that learning from experience also meant learning from mistakes.

Despite mistakes, disasters, failures, and disappointments, Leonardo never stopped learning, exploring and experimenting.

There is no doubt which principle Leonardo considered as defining the true direction for the furrow he wished to plow. That principle was what he termed “experience”.

Book suggests applications and exercises to hone the principle.

Exercises are grouped as **examine experience, check your beliefs and sources, learn from mistakes, create affirmations and learn from anti-role models.**

### **Sensazione**

“All our knowledge has its origin in our perceptions” - Leonardo Da Vinci

Sight, sound, touch, taste and smell are keys to doors of experience. Da Vinci believed secret of Dimostrazione are revealed through senses.

“The five senses are ministers of soul” - Leonardo Da Vinci

Leonard reflected sadly that average human “looks without seeing, listens without hearing, touches without feeling, eats without tasting, moves without physical awareness, inhales without awareness of odour or fragrance, and talks without thinking.”

Book presents several questions and exercise for looking and seeing, listening and hearing, aromatic awareness, taste and touching & feeling. Attention is also drawn to synesthesia - the merging of the senses.

### **Sfumato**

As you awaken your powers of Curiosita, probe the depths of experience and sharpen your senses, you come face to face with the unknown. Keeping your mind open in the face of uncertainty is the single most powerful secret of unleashing your creative potential. And the principle of Sfumato is the key to that openness.

“That painter who has no doubt will achieve little” - Leonardo

Book has many suggestion and exercise for developing the Sfumato principle.

Look at set of questions in your notebook and see which one causes greatest sense of uncertainty and ambivalence. Describe the feeling of ambiguity. Describe the feeling of anxiety. Where in the body do you experience them? Count number of times per day that you use an absolute such as “totally”, “always”, “certainly”, “must”, “never” and “absolutely”.

Practice the contemplation exercise with any of the chosen paradoxes such as joy and sorrow, good and evil, intimacy and independence, strength and weakness etc

**Spaces between your conscious efforts provide a key to creative living and problem solving.** These spaces allow perception, ideas, and feeling to incubate.

“Greatest geniuses sometimes accomplish more when they work less” - Leonardo

Neuroscientists estimate that your unconscious database outweighs the conscious on an order exceeding ten million to one. This database is the source of your creative potential. In other words part of you is much smarter than you are. The wisest people regularly consult that smarter part. You can too by making space for incubation. Take time for solitude & relaxation and trust your gut.

## **Arte/Scienza**

The terms left-brained and right-brained came into popular parlance through the Nobel Prize winning research of Professor Roger Sperry. Sperry discovered that in most cases, the left hemisphere of cerebral cortex processes logical, analytical thinking while the right hemisphere processes imaginative, big picture thinking.

Seekers of balance are invariably drawn to a study of Leonardo. He is considered supreme "Whole brain" thinker.

Mind mapping is a whole brain method for generating and organizing ideas, originated by Tony Buzan, and largely inspired by Da Vinci's approach to note taking.

Leonardo urged scientist and artists to "go straight to nature" in the search of knowledge and understanding. Perhaps the most amazing natural system of all is right inside your skull. The basic structural unit of brain function is the neuron. Each of our billions of neurons branches out from a center, called the nucleus. Each branch, or dendritic (from Dendron meaning tree) is covered with little nodes called dendritic spines. As we think, electrochemical "information" jumps across the tiny gap between spines. This junction is called a synapse. Our thinking is function of a vast network of synaptic patterns. A mind map is a graphic expression of these natural patterns of the brain.

Learn the rules of mind mapping briefly covered by the book. To create a mind map:

1. Take a blank piece of paper, and write the question you are considering at the top.
2. In the center of the page, draw a symbol which represents both the left- and right-sides of the brain.
3. Next, print key words which come to mind on lines that radiate out from the central image. Print one key word per line, with each line being the same length as each key word.
4. For each key word that you have drawn, draw lines out from there, listing the ideas that flow from that key word. Give each of these second-generation words their own line, going outwards from the parent key word.
5. Keep going without censoring what you're doing. Write down whatever comes to mind for each of the key words.
6. Once you've generated enough material, stop and look at your map. Look for major themes -- ideas that have been expressed in a few different variations. Number the themes you can identify.
7. Connect ideas that are related with arrows, or use colors to connect these different themes.
8. Now redraw the mind map, with every theme grouped together. Keep refining it until you feel you've completely exhausted the subject.

"Everything is connected to everything else." -- Leonardo da Vinci

"Those who become enamored of the art, without having previously applied to the diligent study of the scientific part of it, may be compared to mariners who put to sea in a ship without a rudder or compass and therefore cannot be certain of arriving at the wished for port." -- Leonardo da Vinci

## **Corporalita**

In addition to cultivating an ability to think clearly, logically and creatively, da Vinci was in exceptionally good physical health. He taught (and exemplified) the idea that smart people should also take good care of their physical health and well-being if they expect to remain productive throughout their lives.

To do this develop a regular fitness program, study practical anatomy, use the Alexander Technique to relearn poise, cultivate ambidexterity and learn how to juggle.

## **Connessione**

“Everything comes from everything, and everything is made out of everything, and everything returns into everything.” -- Leonardo da Vinci

Despite the fact we live in an age of specialization, maintaining an accurate visualization of the grander scheme of things can be particularly worthwhile. The greatest success in business (as well as the most inner happiness) will come to those who understand that all actions, patterns and relationships are part of the totality that envelopes the human race.

Contemplate the concept of wholeness. Write down in your notebook your concept of wholeness. What, precisely, does it mean to you? How can it be expressed most accurately? What is its opposite? What about conflicts that may occur?

Study the system dynamics of your organization. Ponder the dynamics of any organization. What are the roles people are called on to play? What happens when stress becomes involved? How have the roles changed over the years? Try drawing a diagram that represents the entire organization from different perspectives. Use the metaphor of a human body. How does that help you gain some insights into the dynamics at work in the system?

Make some mutant combinations. Take some completely unrelated items and visualize them being combined. What would such a mutant object look and act like? What would be its advantages? Its disadvantages? Try and use this to your advantage by developing creative variations to long-established and familiar systems.

Talk with an imaginary role model. Actually having an imaginary conversation with a role model is often an excellent way to develop perspective and insight into any situation facing you. If nothing else, it will most certainly stimulate your creative abilities and may provide additional inspiration to action.

Ponder the origins of things you commonly use. This exercise makes you stop taking everyday things for granted and sharpens your awareness of the present moment. Take any object you use and think about what was involved in bringing that product to you. There are an infinite variety of topics you can think about along these lines, including the development of the materials and manufacturing processes, the economic and social forces related to the manufacturing process, the cultural results of those forces and so on.

Think micro / macro. Microcosmic thinking requires that you focus on the small level -- right down to the cellular or molecular level even. Create an image in your mind of all the minute systems and subsystems that work beneath the surface to create the larger system. Then, change your viewpoint to a macrocosmic one by looking at how the system fits into the society or economic network as a whole. How does this system create value, and how does

that value flow to other parts of the system. By thinking on a micro- and macro- level, you gain a much broader and more detailed perspective.

Develop time lines. A time line of significant events definitely provides a big picture perspective. It also enables you to define the decisions taken, the options not pursued and the relationship between an action and its consequences. Try visualizing any timeline as flowing from a source to a destination. If you can do this vividly enough, you start refining your predictive powers and fine-tuning your intuition.

Make a master mind map of your life, your career, your company or your product. Take the time to comprehensively set out -- in mind map format -- precisely what you expect to achieve during your lifetime. The same exercise can also be used effectively to develop a broader perspective on your career, your businesses entity or even for a specific product. This exercise will allow you to craft a vision, develop specific goals and select effective strategies. It will also allow blind spots to be highlighted, roadblocks to be avoided and missing elements to be addressed. This exercise may take several days to allow ideas to percolate to the surface:

Day 1 - Sketch the big picture of your dreams, Day 2 - Explore your goals, Day 3 -- Clarify your core values, Day 4 - Contemplate your purpose, Day 5 -- Assess your current realities, Day 6 -- Look for connections, Day 7 - Strategize for change