



# Dimostrazione

*A Commitment to Test Knowledge  
through Experience, Persistence, and  
a Willingness to Learn from Mistakes.*

Think of the best teachers you have ever had. What makes a teacher great? More than anything else, it is the ability to help the student learn for himself. 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. Leonardo made the most of his experiences in the studio of the master painter and sculptor Andrea del Verrocchio, whom Da Vinci biographer Serge Bramly refers to as “a one-man university of the arts.” The training the young Leonardo received as an apprentice in Verrocchio’s studio emphasized experience more than theory. He learned to prepare canvases and paints and was introduced to the optics of perspective. The technical secrets of sculpture, bronze casting, and goldsmithing were part of the curriculum, and he was encouraged to study, through direct observation, the structure of plants and the anatomy of animals and humans. Thus he grew up with a profoundly practical orientation.

Leonardo’s practical orientation, penetrating intelligence, curiosity, and independent spirit led him to question much of the accepted theory and dogma of his time. In the course of his geologic investigations, for example, he discovered fossils and seashells on mountain peaks in Lombardy. In the *Codex Leicester* he advances decisive arguments against the prevailing view that these were deposits of the biblical flood, based not on theology but on his logical thinking and real-world experience. Disputing each assumption on which conventional wisdom was based, he finally concludes that “such an opinion can not exist in brains of any extensive powers of reasoning. . . .”

In his studies of geology, Leonardo walked the hills of Lombardy and held fossils in his hands. When he wanted to learn anatomy, he dissected more than thirty human bodies and countless animal corpses. Like his research on fossilization, his anatomic work was a direct challenge to the ac-

cepted authorities of the time. As he wrote: "Many will think that they can with reason blame me, alleging that my proofs are contrary to the authority of certain men held in great reverence by their inexperienced judgments, not considering that my works are the issue of simple and plain experience which is the true mistress."

Throughout his life he proudly referred to himself as *uomo senza lettere* ("man without letters") and *discepolo della esperienza* ("disciple of experience"). He wrote, "To me it seems that those sciences are vain and full of error which are not born of experience, mother of all certainty, first hand experience which in its origins, or means, or end has passed through one of the five senses."

Leonardo championed originality and independence of thought. He urged, "No one should imitate the manner of another, for he would then deserve to be called a grandson of nature, not her son. Given the abundance of natural forms, *it is important to go straight to nature. . .*" His willingness to reject imitation, question authority, and think for himself would be remarkable in any age; but it becomes truly amazing when one considers that he was heir to an era that assumed, as William Manchester emphasizes, that "all knowledge was already known."

In addition to being one of the least pious thinkers of his time, Leonardo was also one of the least superstitious. He saw the popular attention to alchemy and astrology as the enemy of experience and independent thought and desired the day "when all astrologers will be castrated."

Although critical of the scholastic and academic traditions, Leonardo did not throw out the baby with the bathwater. For example, he taught himself Latin in 1494 at the age of forty-two to gain a deeper knowledge of the classics. And Leonardo maintained his own library. His collection included the Bible, Aesop, Diogenes, Ovid, Pliny the Elder, Dante, Petrarch, Ficino, and texts on agriculture, anatomy, mathematics, medicine, and warfare. Da Vinci scholar Professor Edward MacCurdy emphasizes that "he was in the habit of studying all classical and medieval authorities obtainable on the subjects in which he was interested."

Leonardo consorted with other great minds including Bramante, Machiavelli, Luca Pacioli, and Marcantonio della Torre. He viewed the

work of others as "experience by proxy" 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. He wrote, "Experience never errs; it is only your judgement that errs in promising itself results as are not caused by your experiments."

Although generally recognized as the greatest genius of all time, Leonardo made many colossal mistakes and staggering blunders. Among his most notable faux pas were tragically unsuccessful experiments in fixing paint for *The Battle of Anghiari* and *The Last Supper*; disastrous and hugely wasteful attempts, sponsored by the Signoria of Florence, to divert the Arno River; and a flying machine that never got off the ground. There was also a particularly hilarious failed scheme to automate Ludovico Sforza's kitchen. Asked to preside as head chef for a major banquet, Leonardo created a grand plan for sculpting each course to be served to the more than two hundred guests. The dishes were designed as miniature works of art. Leonardo built a new, more powerful stove and a complex system of mechanical conveyor belts to move plates around the kitchen. He also designed and installed a massive sprinkler system in case of fire. On the day of the banquet everything that could go wrong did. Ludovico's regular kitchen staff weren't capable of the fine carving that Leonardo required, so the maestro invited more than a hundred of his artist friends to help out. In the vastly overcrowded kitchen, the conveyor system failed, and then fire broke out. The sprinkler system worked all too well, causing a flood that washed away all the food and a good part of the kitchen!

Despite mistakes, disasters, failures, and disappointments, Leonardo never stopped learning, exploring, and experimenting. He demonstrated Herculean persistence in his quest for knowledge. Next to a drawing of a plow in his notebook Leonardo proclaimed, "I do not depart from my furrow." Elsewhere he noted, "Obstacles do not bend me" and "Every obstacle is destroyed through rigor."

Martin Kemp, author of *Leonardo da Vinci: The Marvellous Works of Nature and Man*, comments: "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.'

## DIMOSTRAZIONE AND YOU

The real significance of the Renaissance was the transformation of fundamental assumptions, preconceptions, and beliefs. Leonardo's willingness to challenge the dominant world view, through application of the principle of *Dimostrazione*, placed him in the vanguard of this revolution. He realized that one challenges the world view by first challenging one's own view, cautioning that "the greatest deception men suffer is from their own opinions." Learning to think like Leonardo requires the eye-opening work of questioning our own opinions, assumptions, and beliefs.

Are you ever deceived by your own opinions? Are your opinions and beliefs truly your own? The exercises that follow are designed to help you think with more freedom and originality. But first take some time to consider the role that *Dimostrazione* plays in your life today and how you might strengthen it further. Evaluate your own independence: Are you an independent thinker? When was the last time you changed a deeply held belief? What did it feel like?

Think of your friends and colleagues. What sources do they rely on to determine their beliefs and opinions? Who is the most independent, original thinker you know? What makes that person an original?

Think for a moment of the way you have learned what you know. Do you learn more from your successes or failures, from good times or bad? We all know that good judgment comes from experience. But we also know that we often gain experience through bad judgment. Do you make the most of your mistakes?

Contemplate the self-assessment checklist on the next page. These are challenging questions, but your honest reflection will help you focus on getting the most from the exercises that follow.

## *Dimostrazione:* *Self-Assessment*

- I am willing to acknowledge my mistakes.
- My closest friends would agree that I am willing to acknowledge my mistakes.
- I learn from my mistakes and rarely make the same one twice.
- I question "conventional wisdom" and authority.
- When a celebrity I admire endorses a product, I am more likely to buy it.
- I can articulate my most fundamental beliefs and the reasons I hold them.
- I have changed a deeply held belief because of practical experience.
- I persevere in the face of obstacles.
- I view adversity as an opportunity for growth.
- I am sometimes susceptible to superstition.
- In considering new ideas my friends and associates would say that I am
  - a) gullible and "New Agey,"
  - b) a closed-minded cynic, or
  - c) an open-minded skeptic.



## DIMOSTRAZIONE: APPLICATION AND EXERCISES

### EXAMINE EXPERIENCE

An hour spent with these questions can yield a lifetime's reflection on how experience has determined your attitudes and behaviors. Working with your notebook, explore the following questions:

What are the most influential experiences of your life? Take about twenty to thirty minutes and list at least seven, along with a one-sentence summary of what you learned from each experience.

Now spend a few minutes reflecting on how you *apply* what you have learned from these most influential experiences on an *everyday* basis.

Next look at your list of significant experiences and ask, What is the single most influential experience of my life? (For some people this is an easy question to answer; for others, there isn't one experience that jumps out. If nothing jumps out for you, choose any experience from your list.)

Then spend a few minutes asking yourself, How has this experience colored my attitudes and perceptions? Aim to note down, in a sentence or two, the effects of the experience on your view of the world.

Finally ask yourself, Can I rethink some of the conclusions drawn at the time? Avoid answering this last question too quickly; just hold it in your mind and heart for a while and let it "marinate."



## CHECK YOUR BELIEFS AND SOURCES

Many of us are unaware of the sources we use to obtain and verify information. We know that we have opinions, assumptions, and beliefs about a wide variety of topics: human nature, ethics, politics, ethnic groups, scientific truth, sexuality, religion, medicine, the meaning of life, art, marriage, parenting, history, other cultures, etc. But do you know how you found those beliefs? Or where you got the information on which they're based?

Start by choosing any three of the above areas; for example, you might choose human nature, politics, and art. Then, in your notebook, write down at least three ideas, opinions, assumptions, or beliefs that you hold in the areas you have chosen to consider. For example:

#### *Human Nature*

- ♦ "I believe that people are basically good."
- ♦ "I believe that behavior is predominantly determined by genetics."
- ♦ "It's human nature to resist change."

After you have listed at least three beliefs about each of your chosen areas, ask yourself:

- ♦ How did I form this idea?
- ♦ How firmly do I believe it?
- ♦ Why do I maintain it?
- ♦ What would make me change my belief?
- ♦ Which of my beliefs inspire the strongest emotions?



Then look at each of your beliefs in the three areas you have chosen to examine and consider the role of the following sources in its formation:

- ♦ Media: books, the Internet, television, radio, newspapers, and magazines.
- ♦ People: family, teachers, physicians, religious leaders, bosses, friends, and associates.
- ♦ Your own experience.

What criteria do you use for assessing the validity of information you receive? Do most of your ideas come from books? Or are you primarily influenced by family? How much of what you read in the newspaper or see on television do you believe? Aim to determine, through reflection and contemplation, the dominant source of your information and the underpinnings of your beliefs and opinions. See if you hold any beliefs for which you have no experiential verification. Is there a way you could test your convictions in experience?

### THREE POINTS OF VIEW

In your notebook write out a statement of the belief that, in the previous exercise, generated the strongest emotion.

In the *Curiosità* chapter we learned that when Leonardo was questing for objective knowledge—dissecting a corpse or assessing one of his paintings—he viewed his subject from at least three different perspectives. Do the same with your beliefs and opinions.

Just as the maestro used a mirror to see his paintings in reverse, try making the strongest possible argument *against* your belief.

Leonardo also sought perspective by reviewing his paintings from a distance. Try reviewing your belief “from a distance” by asking yourself, Would my views on this change if I: lived in a different country; came from another religious, racial, economic, or class background; was twenty years older/younger or was a member of the opposite gender?

Finally, seek out friends or acquaintances who you suspect might offer perspectives different from your own. Interview your friends, aiming to see the issue from another point of view.

### PRACTICE INTERNAL ANTICOMMERCIAL MARTIAL ARTS

As you read this book, thousands of exceptionally creative, highly focused advertising executives are marshaling budgets in the billions to influence your values, self-image, and buying habits. Preying on sexual insecurities or Walter Mitty fantasies or just bludgeoning with pure repetition, advertisers are very good at reaching their demographic targets. Maintaining independence of thought in the face of this onslaught requires a discipline similar to that developed through martial arts training. Try the following “self-defense” exercises:

- ♦ Go through your favorite magazine and analyze the strategy and tactics of each advertisement.

- ♦ Do the same analysis with the commercials from your favorite television and radio programs.
- ♦ Note which advertisements affect you most strongly and why.
- ♦ How did advertising affect you when you were a child?
- ♦ Make a list of the three best advertisements you have ever seen. What made them so good?
- ♦ Identify ten purchases you have made over the last few months, and ask yourself if you were influenced, in any way, by advertising.
- ♦ Try a stream of consciousness writing session on the topic "The role of advertising in the formation of my values and self-image."



One of the most clever and cynical tactics of advertisers is expressed in the attempt to co-opt the image of independent thinking and individualism. Witness attempts to identify with "the Rebel" and "the Individualist" through such revolutionary gestures as driving an off-road vehicle, smoking a fifteen-dollar cigar, or wearing a particular brand of jeans or sneakers or a baseball cap turned backward. Record examples of this phenomenon in your notebook. Some that you may have noticed include:

- ♦ The Marlboro Man *and* the Virginia Slims Lady.
- ♦ The chain of steak houses whose motto is "No rules, just right" or the hamburger franchise that reminds us, "Sometimes you gotta break the rules." (Try testing these by violating the implicit rule "Pay for your steak or burger.")

- ♦ Even the beloved Dilbert, symbol of rebellion to inane bureaucracy, has become co-opted. He is now a mass-market phenomenon, used to sell more advertising and generate more cubicles.

## LEARN FROM MISTAKES AND ADVERSITY

Explore your attitude toward mistakes by contemplating the following questions and recording your reflections in your notebook:

- ♦ What did you learn at school about making mistakes?
- ♦ What did your parents teach you about making mistakes?
- ♦ What is the biggest mistake you ever made?
- ♦ What did you learn from it?
- ♦ What mistakes do you repeat?
- ♦ What role does the fear of making mistakes play in your daily life, at work and at home?
- ♦ Are you more likely to make mistakes of commission or omission?



Try a stream of consciousness writing session on the topic "What I would do differently if I had no fear of making mistakes."

Leonardo made many mistakes and experienced tremendous adversity in his quest for truth and beauty. In addition to false accusations, invasions, exile, and

the wanton destruction of one of his greatest works, the maestro's most significant adversity was probably the sheer loneliness of being so far ahead of his time.

Although he experienced self-doubt and questioned the value of his efforts, he never gave up. Leonardo's courage and persistence in the face of adversity are tremendously inspiring. He strengthened his will to continue his work through affirmations that he wrote in his notebook, such as:

"I do not depart from my furrow."

"Obstacles do not bend me."

"Every obstacle is destroyed through rigor."

"I shall continue."

"I never tire of being useful."



## CREATE AFFIRMATIONS

Long-term studies by Dr. Martin Seligman and many others show that the critical determinant of success in business and life is resilience in the face of adversity. Awareness, deep contemplation, and a sense of humor are your best friends in attempting to learn from difficult experiences. You can also, like Leonardo, strengthen your resilience by creating your own affirmations. In your notebook, write out at least one affirmation to inspire you in dealing with each of your greatest challenges.

Many people use affirmations beginning with the phrase "I am . . ." Such as "I am patient with myself" or "I am becoming more patient with myself." Although "I am" affirmations can be helpful, they tend to elicit a primarily intellectual, cognitive response. You can get

your affirmations to work at a deeper level by framing them in a more emotional, heart-centered way. The following experiment shows how:

Repeat the following affirmation: *I am patient with myself.* Notice your response.

Now try it this way: *I feel patient with myself.* Again, notice your response. When you tell yourself how you feel, not just how you are, you are more likely to feel what you say, allowing your affirmations to take hold on a deeper level.

The following affirmations, written in collaboration with my friend Dr. Dale Schusterman, are designed to help you access your heart center so that deeper changes can emerge.

### *Relationships*

- ♦ I feel willing to allow another person into my heart.
- ♦ I feel curious what I might change in myself that would help my partner.
- ♦ I feel the difference between my father and my husband (mother/wife).
- ♦ I honor the feminine nature in my wife (girlfriend).

### *Spirituality*

- ♦ My connection to the divine (Christ, Higher Self, Buddha, etc.) is my top priority (say this while visualizing work, relationships, money, expectations, parents, stressful events from the past, etc.).
- ♦ I feel the presence of the divine within me.
- ♦ In my heart, I feel a divine will working in my life.



- ♦ I acknowledge the lessons my soul needs to learn from (say the name of a person or an experience).

### Money

- ♦ I feel the difference between my desires and my needs.
- ♦ I feel curious how to allow abundance to enter my life.
- ♦ I feel willing for abundance to enter my life.
- ♦ I feel worthy of abundance in my life.
- ♦ I acknowledge that abundance already exists in my life.

### Learning

- ♦ The brilliance of my mind manifests in ways that surprise me.
- ♦ I acknowledge my ability to learn intuitively.
- ♦ I feel curious how to (solve this problem, learn this subject).
- ♦ I trust the knowledge to be here when I need it.

### Career

- ♦ I feel worthy in my contribution to the world.
- ♦ I feel connected to my inner strength when others view my work.
- ♦ I feel curious how to manifest my inner purpose in the world.
- ♦ I feel willing to manifest my inner purpose in the world.



## DIMOSTRAZIONE FOR PARENTS

How do you raise a child who thinks for himself, learns from mistakes, and perseveres in the face of adversity? As with most aspects of parenting, the answers aren't easy. But one key is to nurture your child's confidence. The word *confidence* comes from the roots *fidere*, "to trust," and *con*, "with." Confidence, trust in oneself and one's abilities, is the secret of success, and the experience of success is a key to building confidence. Build your children's confidence by guiding them to success in learning. Break tasks down into simple components so kids get a series of small successes rather than a few big failures.

Nothing builds a child's self-confidence like unconditional love. Let your children know that *you love them for who they are, rather than for what they do*. Complement unconditional love with enthusiastic encouragement. Shower your children with phrases like "You can do anything you set your mind to," "I believe in you," and "I know you can do it."

Treat mistakes as learning opportunities. When your children do fail, give them gentle, *accurate* feedback and enthusiastic encouragement. One of the problems with some "self-esteem"-oriented education is that it confuses unconditional love and encouragement with *inaccurate* feedback. Telling a child that his performance is good or right when it is not undercuts the development of genuine self-esteem. Accurate feedback grounds your child in reality and communicates your respect for his ability to learn.

### *Joy of Life*

- ♦ I feel joy within myself in all situations (say this as you visualize a stressful situation).
- ♦ I feel deserving of happiness.
- ♦ I feel joy in the happiness of others.
- ♦ My joy and happiness come from within me.

### *Self-actualization*

- ♦ I trust my inner self.
- ♦ I feel the presence of the divine within me.
- ♦ I allow myself to feel my feelings.
- ♦ I acknowledge my feelings about myself.



## LEARN FROM “ANTI-ROLE MODELS”

One of the most efficient ways to learn from mistakes is to let someone else make them for you. It is wonderful to have positive role models like Leonardo whom you can strive to emulate. But you can also learn a tremendous amount by studying “anti-role models.” For example, I learned most of what I know about coaching and teaching from my worst coaches and teachers. I remember sitting in class while one teacher droned on endlessly; another never listened when someone asked a question; then there was the coach who was fond of humiliating his players. They taught me what *not* to do. I am also grateful to other anti-role models who, by

demonstrating exactly what not to do, have helped me avoid getting into debt and having a nervous breakdown.

Make a list of at least three people who have made mistakes that you would like to avoid. How can you learn from *their* mistakes? The tricky thing about this exercise is that sometimes your greatest anti-role models also happen to be positive role models in some areas. Your task, of course, is to accurately discriminate between what you want to emulate and what you want to avoid.

### DIMOSTRAZIONE AT WORK

In the business world, senior executives overwhelmingly point to a *failure to heed their own experience as the prime cause of their worst decisions*. Too often businesspeople allow their better judgment, based on experience, to be overruled by analysts, attorneys, and academic authorities. Mark McCormack, the founder of the International Management Group and author of *What They Don't Teach You at Harvard Business School*, describes the limiting mental set that can be created by academic training: “. . . A master's in business can sometimes block an ability to master experience. Many of the M.B.A.s we hired were either congenitally naive or victims of their business training. The result was a kind of real-life learning disability—a failure to read people properly or to size up situations and an uncanny knack for forming the wrong perceptions.”

The best leaders and managers know, as Leonardo did, that experience is the heart of wisdom.