LIFELONG LEARNING:
LESSONS FROM LEONARDO DA VINCI

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ABOUT ME

Teacher
WHEN I’M NOT TEACHING

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AGENDA

• Understanding learning
• The importance of lifelong learning today
• Leonardo da Vinci as a exemplar of a lifelong learner
Everyone has the right to education. (Article 26)

Education is a fundamental human right and essential for the exercise of all other human rights. It promotes individual freedom and empowerment and yields important development benefits.
THE IMPORTANCE OF EDUCATION

Education brings possibilities to people’s lives. Education brings about economic well being, enhances health, encourages self-reliance and entrepreneurship, and helps families build better lives and lift their children out of poverty.
EDUCATION OPENS DOORS
EDUCATION PROVIDES OPTIONS IN LIFE
HOW DO WE “GET EDUCATED”?  

By “learning”, and the OECD categorises learning into three types:  

• Formal learning  
• Non-formal learning  
• Informal learning
FORMAL LEARNING

Formal learning is always organised and structured, and has learning objectives. From the learner’s standpoint, it is always intentional: i.e. the learner’s explicit objective is to gain knowledge, skills and/or competences.
Informal learning is never organised, has no set objective in terms of learning outcomes and is never intentional from the learner’s standpoint. Often it is referred to as learning by experience or just as experience.
Non-formal learning may occur at the initiative of the individual but also happens as a by-product of more organised activities, whether or not the activities themselves have learning objectives.
Einstein urged his son, Hans, to play the piano, especially the music that was not assigned to him by his teacher, saying:

“This is the way to learn much, with joy, so that one is not aware of the time passing. I am often so absorbed in my work, that I forget lunch time.”
STAGES OF LEARNING

• intuitive learner (at home)
• scholastic learner (in school)
• skilled domain worker (at the workplace)
PREVIOUSLY, A DIVIDED LIFETIME

Learning followed by working.
NOW

Learning *in all phases of life*. 
LEARNING TODAY

• Learning has become an integral and irremovable part of work activities

• Learning is a new form of labour

• Learning, especially in later life, opens up “a whole new world”
LIFELONG LEARNING

• The idea: learning does and should occur **throughout** a person’s lifetime

• Involves the development of a **mindset** that one should be open to new ideas, decisions, skills or behaviours

• It has become critical because an **acceleration** in the pace of scientific and technological progress (need to remain current)
LIFELONG LEARNING (CON’T)

• Necessary because the knowledge and skills acquired in primary, secondary and tertiary education will not be sufficient for a career that spans four to five decades

• Occurs in a society in which learning possibilities exist for those who want to learn

• It is tied to personal growth, and a desire to remain relevant and effective in a rapidly changing world
LIFELONG LEARNING: NOT A NEW IDEA

We propose lifelong education as the master concept for educational policies in the years to come for both developed and developing countries.

Faure Report (1972)
LIFELONG LEARNING: NOT A NEW IDEA

A key to the twenty-first century, learning throughout life will be essential, for adapting to the evolving requirements of the labour market and for better mastery of the changing timeframes and rhythms of individual existence.

WHY THE EMPHASIS ON LL TODAY?

• Technology is transforming the world very rapidly

• Old Jobs are being transformed, and new ones are being created
  • immigration officers
  • supermarket cashier
  • bank tellers
  • real estate agents
  • ...

• post offices
• classrooms
• libraries
• fast-food restaurant
• courtroom
• ...

THE FIVE COMPONENTS OF LL

• Self-directed learning
• Learning on demand
• Informal learning
• Collaborative learning
• Microlearning
SELF-DIRECTED LEARNING

• Driven by our desire to understand something, to get something done instead of solving a problem given in a classroom setting

• Self-directed learning is the way people learn in their lives outside the classroom

• Students must learn to acquire knowledge on their own, and to direct their own learning (self-direction)
• It de-emphasises the process in which the teacher instructs a passive learner, but focuses on joint knowledge creation enhanced by the creation, discussion and evolution of artefacts or concepts.

• It transforms learning from something externally prescribed and ordained, into something internally motivated.

• Sometimes, this is driven by a desire for personal growth.
LEARNING ON DEMAND

• Also referred to as just-on-time learning

• Most job-relevant knowledge must be learnt on demand, and learners need to be able to determine what they need to know at a given point of time in order to solve problems, perform specific tasks, to quickly update their skills

• E.g., how to use a specific software package, …
INFORMAL LEARNING

• Learning outside of formal educational institutions (e.g., at home, in a community, and at the workplace)
• Often done as a group (learning becomes a joint activity)
• The activity is often fun
• The learner has a choice of topic, time and place (and therefore, assumes a high level of responsibility)
• Based on the idea that learning is a naturally social act in which the participants talk among themselves, and it is through the talk that learning occurs (Gerlach, 1994).

• Learners benefit when exposed to diverse viewpoints from people with varied background.

• Learners are continuously challenged as they have to articulate and defend their ideas.
MICROLEARNING

• An emerging method of learning that utilizes web content, with activities of short duration

• A constant challenge today is to find new information and build new knowledge in digital media networked environments

• Professionals increasingly use e-mails, mobile phones, Google and Web 2.0, to deal with small, loosely linked, constantly changing, pieces of content
WHAT’S IMPORTANT IN LL

- Self-management
- Self-monitoring
- Motivation
- Attitude
SELF-MANAGEMENT

• Involves the organisation and implementation of the educational experience

• Goal management, learning methods, support, and outcomes are collaboratively and continuously assessed and negotiated

• Proficiency, resources, and interdependence have to be balanced
SELF-MANAGEMENT (CON’T)

• Proficiency represents the abilities and skills of the facilitator and learner

• Resources encompasses a range of support and assistance available in the educational setting

• Interdependence reflects institutional or subject norms and standards as well as learner integrity and choice
SELF-MONITORING

• Addresses cognitive and metacognitive processes: monitoring the repertoire of learning strategies as well as an awareness of and an ability to think about our thinking (plan and modify thinking according to the learning task/goal)

• Reflects a commitment and obligation to construct meaning through critical reflection and collaborative confirmation
Motivation plays a very significant role in the initiation and maintenance of effort toward learning and the achievement of cognitive goals.

Motivational factors shape intentions and fuel task involvement.

Effort and persistence will be greatly influenced by the entering motivational state.
ATTITUDE

• In learning, attitude is paramount

• When thinking about attitude, it is the student’s attitude that comes to mind, but learning depends on the attitudes of everyone, the student, parents, family members, teachers, administrators of schools, supervisors, and society at large.
LEONARDO DA VINCI: CONTEXT

• April 15, 1452 (Vinci, Italy) – May 2, 1519 (Amboise, France)

Context:
• Sandro Botticelli – 1445
• Hieronymus Bosch – c. 1450
• Michelangelo Buonarroti – 1475
• William Shakespeare – 1564
SANDRO BOTTICELLI
HIERONYMUS BOSCH
MICHELANGELO BUONARROTI
LEONARDO DA VINCI: BACKGROUND

• Full name, Leonardo di Ser Piero da Vinci

• The honorific ‘Ser’ is loosely equivalent to the English ‘Sir’, a prerogative of notaries and lawyers

• LdV was born in to a family of notaries – people who drew up contracts, attested deals, made and kept records – roles which oiled the wheels of commerce
• The da Vincis were a well-established family, not noble, not especially rich, but a family of good stock and standing
• LdV was an illegitimate child
• Apprenticed to the sculptor Andrea del Verrocchio, c. 1466
• The apprenticeship was arranged by LdV’s father, Ser Piero
The statue of Leonardo da Vinci in Milan
THE CURIOUS MIND

• Kenneth Clark: Leonardo da Vinci is the most relentlessly curious man in history

• He signs himself off as Leonardo Vinci discepolo della sperientia, which means ‘disciple of experience’ or ‘disciple of experiment’

• When he wanted to try out a new pen-nib, he would doodle the word ‘dimmi’, which means ‘tell me’
THE OPEN MIND

• April 15, 1452 – May 2, 1519 (67 years old)
• Lifelong learning is closely tied to the challenge of openness and change the modern individual must face in his lifetime
• LdV was open to the changes he needed in his relatively long life
THE RESTLESS MIND

Leonardo’s manuscripts (contained in the Atlanticus, Aruldel, Urbinas, Leicester, Trivulzio Codices) are a map of his mind. The contain everything from the briefest half-sentence or squiggled calculation to fully worked-out scientific treatises and literary exercises.
The great lesson of the manuscripts is that everything is to be questioned, investigated, peered into, worried away at, brought back to first principles.

Their subject-matter ranges from anatomy to zoology by way of aerodynamics, architecture, botany, costume-design, civil and military engineering, fossil studies, hydrography, mathematics, mechanics, music, optics, philosophy, robotics, star-gazing, stage-design and viticulture.
• For Leonardo, the key organ in understanding the world is not the brain but the eye

• He wrote: All our knowledge has its foundations in our senses …

• The crucial point here is that of clarity – being able to see the visual evidence of the world with an accuracy and insight that lead into the heart of things

• Search for the most concise method, not a longwinded one
THE INDEPENDENT MIND

• Leonardo famously described himself as “omo sanza lettere”, an “unlettered man”

• This does not mean that he was illiterate, but that he had not been educated in the scholarly language of Latin

• He had not received the kind of schooling that led to university, but had followed instead, the course practical apprenticeship
• By saying that he is “omo sanza lettere”, he is not devaluing himself, but stating his independence.

• He is proud of his unletteredness: he has achieved his knowledge by observation and experience rather than receiving it from others as a pre-existent opinion.

• He learnt, first-hand, from Nature herself.

• Leonardo wrote: Those who take for their standard anything but Nature, the mistress of all masters, weary themselves in vain.
GRIT BINDS EVERYTHING TOGETHER

• The idea that to do anything really well, you have to overextend yourself

• The stamina to go over something again and again, no matter how difficult it is (less on intensity)

• Consistency of effort over the long run

• Main idea: with effort, talent becomes skill and, at the very same time, effort makes skill productive
GRIT COMPONENT 1: PASSION

• Not infatuation, or obsession, but consistency over time
• How steadily you hold on to goals over time
• Passion here is not associated with fireworks, but with a compass – the thing that guides you on your long and winding road to where you want to be
• Idea: enthusiasm is common, endurance is rare
GRIT COMPONENT 2: PERSEVERANCE

• An important requirement of perseverance are goals
• It is important to envision goals in a hierarchy
• At the bottom of the hierarchy are our most concrete and specific goals, which are typically short-term.
• We want to accomplish the bottom-level goals because they help us to get to our middle-level goals.
• The higher level the goal in the hierarchy, the more abstract (and important) it is.
• Perseverance is required to hold the top level goal for a very long time (until you succeed) – this is the essence of grit.
• A lack of grit can result from less coherent goal structures.
SELECTED PRODUCTS OF LEONARDO’S LIFELONG LEARNING
View of a Skull

Drawing
Mona Lisa, 1503–1506

Painting
The Vitruvian Man

Anatomy
The Tank

Military Engineering
The Parachute

Military Engineering
The Helicopter

Aerodynamics
The Drum Machine

Music
LEONARDO DA VINCI UNDERSTOOD LIFELONG LEARNING.

So must we.
THANK YOU