

Learning with Leonardo

What is the *Etcetera* in Your Teaching?

Breaking Familiarities

Five hundred years ago, Leonardo Da Vinci immersed himself in every specialised discipline and direction that he could find, often all at once. He was addicted to and driven by what he didn't know, prying into everything, committed to unravelling the mysteries and urgencies that surrounded him. He took up an extraordinary range of interests and then abandoned almost as many. His was an eclectic brilliance; he dipped his mental brush into a whole range of subjects. When his notebooks were eventually understood and read (as late as the nineteenth century) he emerges as a groundbreaking anatomist, architect, artist, botanist, designer, engineer, geologist, musician and scientist who had made countless discoveries that were not fully appreciated for centuries. He was restless, he delayed, he rejected the idea of a default solution, or of a standardised notion of excellence.

He interrogated the beliefs and conventions of his time, the pervasive frames of reference that governed the way his contemporaries thought and lived, and by doing so *broke up their familiarities*. He blurred the boundaries between reality and fantasy, experience

and mystery, between objects and their surroundings. He accepted, even embraced, anomalies and contradictions, recognising the incorrigible plurality of the world.

The Adjacent Possible

In the twenty-first century, when the paths we are encouraged to take tend to lead us toward becoming specialists and reductionists, Leonardo's drive to explore the intersections between his art, maths and an entire range of sciences illustrates the potential of the *adjacent possible*, which happens when different fields of expertise converge in some shared physical or intellectual space. As a painter, it was important for him to understand the *structure* of the human body but essential to appreciate the *function* of what he saw. Painting became science. He was equally adept at using the scalpel as he was the brush or pencil. Dissection of human and horse bodies helped him with key details of, for example, Mona Lisa's smile and St. Jerome's strained neck muscles.

So when we look at Leonardo's anatomical drawings, we are of course struck by the beauty and detail of his

draftsmanship; yet more than that we are taken aback by his ability to interrogate reality through his senses marrying the concrete and the abstract, the intuitive and the cognitive. We are even more astonished by his capacity to uncover and portray in his work what seems to be an *unnecessary beauty*.

A Beginner's Mind

Leonardo's notebooks, and the ideas and drawings they contain, open doors to reveal a kind of shadow future, hovering on the edges of the present state of things, a map of all the ways in which the present can reinvent itself. He does more than encourage new ideas. He helps set up collisions between ideas: the collisions that happen when different fields of expertise converge in some shared physical or intellectual space. Koestler believed *all decisive events in the history of scientific thought can be described in terms of mental cross fertilisation between different disciplines*. Decisive moments in our own learning probably emerge from such moments of cross-fertilisation that prime the pump of learning and progress.

Art and science coalesce when they are *passionate* about the subject and at the

same time *critically dispassionate* about the rules, understanding and knowledge which underpin that subject. We live in a world leaning towards *confirmation bias*. Commentators use what they see and hear to confirm what they already think. We run the risk of being drowned by what Popova described as a *tide of convention and unreasoning collectivism*. Leonardo was no collectivist.

His notebooks and sketches explore his world through foraging for new knowledge, then testing and owning it, questioning assumptions, generating and developing his ideas through drawings and notes. He was never addicted to, or even interested in consensus, but instead, was attentive to the irregular, the odd. He adopted an approach best described as *conscious ignorance* – he looked at his world with what Zen Buddhists would call a beginner's mind, predicated on a commitment to question what we think we know and believe.

The Formation of Attention

Weil calls the process of marrying prolonged effort and imagination, *the formation of attention*. This is perhaps the neatest phrase to describe Leonardo's obsessive, tireless and precise attention to detail, *and* the learning processes that we would hope to experience and to replicate – in our own lives. It encapsulates that development from curiosity to discovery, to discipline and independence that we

hope to give to others and to experience ourselves. It is not about certainties but possibilities. He was practical, as his meticulous drawings testify. He noticed and recorded. He analysed and imagined. He crossed subjects from optics to mathematics and he embraced metaphors, understanding that they simultaneously clarify and make strange.

Combined, these skills countered the anaesthetic of familiarity and helped him to straddle the contradictions he encountered. The phrase *constructive ambiguity* summarises how he used his work as a means of discovery, rather than as a way of telling us what he or we think we know – an evolving conversation, rather than a last word pronouncement.

The Chance of Perfection

The last word Leonardo appears to have written in his notebooks was *etcetera*. There is always more to say, more to discover, more stories to tell. He would never accept that his work had an ending. It could be abandoned, but to say it was finished would be nothing less than accepting defeat. On the point of death, he still hadn't finished some of his greatest works to his satisfaction. They were still by his side. What he is giving us through his drawings and paintings and notebooks is not a set of answers. He is giving us the means to discover something greater. Always the opportunities for new beginnings and additional layerings to perfect our craft over time as he did.

Isn't this what education is, or should be, about? Building and adopting a database of knowledge, of course, but then adapting, adjusting and going on with the search. There are no last page conclusions to learning.

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Too often we seek a false consensual certainty, simply because it is acceptable or reassuring. Leonardo's approach to learning shows that it's important to reject this compulsive cramping ideal and to choose to live with complexity. Our ability to hold doubt, suspend judgement and accumulate additional information allows growth.

We need to accept that when it looks as though we have the answer, we may well have frozen the evolution of our understanding into a static order, or as he would have argued, abandoned the chance of perfection. 🍷



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