



Leonardo da Vinci: The Mechanics of Genius

London Science Museum

Pre-Doctoral Studies

In August 2016 I visited London's Science Museum to see replicas of Leonardo's machines, which included 39 historical models of Leonardo's inventions, including flying machines, diving equipment and weapons. There were also large-scale reproductions of Leonardo's famous drawings and sketches. *What a fabulous exhibition!* I include some photos of the exhibits above.

What strikes me about da Vinci is his prolific creative production; and his thirst to solve problems. If necessity is the mother of invention, then Leonardo applied his inventiveness to many situations of need. And powering his creativity was his amazing imagination, which envisaged mechanisms and machines way beyond their time. I believe that his work as an artist and scientist will have fed into his 'imagination machine'; and his design and engineering work would have been girded up by his mathematical capabilities: all areas working together seamlessly to solve real-life problems. Here, in Leonardo, we have a truly-empowered polymath.

We need more polymaths! Multi-talented, multi-skilled, multi-thinking people who can adapt, flow and create according to need and desire, without separating out disciplines or attaching value to particular ones over others. Leonardo had a subject-equality approach to discovery and learning. I think this approach is reflected in the comments made by Dr. Elizabeth Blackburn, President of the world-famous Salk Institute (a cutting edge research centre built by Nobel Prize Winner Jonas Salk). She states:

"Great research centers are places where inspired creativity, collaboration and scientific freedom should thrive. Time and time again we have seen that the most surprising discoveries and innovations arise out of pursuing high-risk, novel experiments and working with people outside our own areas of expertise."*

If scientific institutes such as Salk can see the need for polymathic, multi-field thinking and collaboration, why can education establishments not? Why is there still an archaic nineteenth century view of discovery and learning which separates out subject areas and places them in hierarchies or competition with each other?

This is the field of research that I intend to study at PHD level in the near future. In preparation, I have been gathering information to this effect. I am fascinated by the neurology of learning with a particular focus on polymathic 'STEAM' thinking and its implications for twenty first century international needs and education (STEAM: science, technology, engineering, arts, maths).

*Retrieved 18.02.16 from: <http://www.salk.edu/about/leadership/>