TRAINING FUTURE ENGINEERS:
WHAT CAN WE LEARN FROM TWELVE OUTSTANDING INNOVATORS?

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A design is a plan for a system, its implementation and utilisation for attaining goals that are intended to change "current situations into preferred ones". Designing involves developing both the goals and the plans for attaining them. In this sense, all human beings are designers, but not all are necessarily good at designing. A study was undertaken into the lives and work of 12 outstanding engineers and innovators that spanned from antiquity to the modern times, to seek common, major traits of, or influences on these individuals. A major, persistent thread across these lives was found to be design-driven motivation that seemed to have fuelled their life-long creativity and learning. The talk focuses on the relevance of this influence as well as the other influences as goals and enablers for creating the engineers of the future: how can we inculcate strong motivation in life-long learning? The talk will provide an overview of a Masters in Design programme that has been running successfully at the Indian Institute of Science, Bangalore for the last 15 years. Based on the personal experience of the speaker in teaching at this programme, as well as his earlier experience of teaching and researching into engineering science and design at the Engineering Department of University of Cambridge, UK, a number of recommendations are made on the desired structure and content for a design and innovation-centred engineering education programme.

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