



How to make a scientist: Sir Tim Hunt's recipe

Should we rethink education to foster curiosity, creativity and competitiveness? At the last World Economic Forum in Davos, Switzerland, Sir Tim Hunt, member of the ERC Scientific Council and Nobel laureate in 2001 proposed some guidelines.

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'Universities and research organisations need to realise that they are competing for top talent with banks and political institutions,' says Sir Tim Hunt, a Nobel Prize-winning biochemist and member of the governing body of the European Research Council (ERC).

'But one difficulty in attracting students to science,' he says, 'is that the way it is taught in schools can be terribly dull. The idea that science is a set of facts that you have to learn makes my blood boil. There is no set menu for discovery: discoveries are random otherwise they wouldn't be discoveries. You have to poke around and do stuff.'

He recalls his dismay at visiting an 'otherwise lovely school' where the science labs did not smell of anything and had no plants on the windowsill. 'No signs of life. What cannot be examined cannot be taught,' he says.

In praise of dirty hands

Hunt took his back-to-basics message to the 2013 World Economic Forum in Davos in January. Sitting on a podium wearing a sweater and hiking boots, he told the audience, many of whom had paid USD 40 000 for accreditation to the invitation-only meeting: 'There's no substitute for rolling up your sleeves and getting your hands dirty.'

Hunt was knighted in 2006 but signs mail 'Dr' rather than 'Sir', and preferably just 'Tim'. He is also happy to admit that his own educational experience was privileged and fortunate. The son of a palaeography scholar who became Keeper of the Western Manuscripts at the Bodleian Library in Oxford, the young Tim attended two elite schools before reading biology at the University of Cambridge.

He makes a clear distinction between the idea of having a whole population that is scientifically aware and the next generation of outstanding scientists, but is clear about what has worked for him and his students over the years.

'Lectures set the syllabus, but it is through talking with an academic supervisor and peers, and reading and writing, that you make real progress. Science is an apprenticeship. The most important thing as a scientist is to "taste blood". Only when you've made your first discovery do you find out what it's all about. Then you want to go on. It's quite addictive.'

Sir Tim Hunt

Sir Tim Hunt was awarded the 2001 Nobel Prize for Physiology or Medicine, with Paul Nurse and Leland H. Hartwell, for identifying the process by which cells multiply. His breakthrough, achieved while he was studying sea urchin eggs, and further discoveries helped researchers better understand how cancer develops and how to detect and treat the disease.

After 25 years in academia he joined the Imperial Cancer Research Fund, now Cancer Research UK, where he was principal scientist from 1990 until he retired in 2010.

So how would he change the teaching of science? For a start, theories about education need a better evidence base. 'So much argument about education is based on personal experience. My plea would be: try things out and see what works.'

Second, teach students the fundamentals, rather than the sort of 'fatuous questions' that he says his teenage daughter has to answer, and that he would not know the answer to himself. 'The idea that the world is made of atoms and bodies are made of cells and that cells only come from other cells is either taken for granted or not appreciated at all.'

Now 70, he recalls how as a student at Cambridge many of his friends were seduced by money into a career in the City of London. 'Science is hard and you need peculiar people to do it well. But the basic question remains: "How do you attract the best brains?"'

Hunt may have been mingling in the realm of bankers and politicians of late, but he is not about to lose his preference for getting stuck in with a pipette and a petri dish. 'Real science is exciting and romantic. It's about the very nature of stuff,' he says.

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