

## **YES is the answer to that elusive entrepreneurship question**

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Patrick McCarthy MInstKT describes a Scottish approach to innovation.

As I write this, I'm preparing for another session with a group of students who have asked me to help them prepare an outline business plan for the Edinburgh heat of the Biotechnology YES business planning competition.

YES is the creation of Professor John Peberdy, Emeritus Professor of Enterprise, University of Nottingham. The competition is now in its 16th year. Whereas it may not be possible to teach people to be entrepreneurs, some believe it is possible to engender a positive attitude towards business - and start-ups in particular.

The Global Entrepreneurship Monitor Scotland 2010 report from the University of Strathclyde suggests that funding entrepreneurship education in HEIs can have a significant impact on entrepreneurial activity. The authors advocate more schemes that allow experimentation in entrepreneurship by students in third level education.

However, Lucas (2005) - in his address to the Council for Industry and Higher Education commenting on start-up activity by alumni of Massachusetts Institute of Technology - makes clear that entrepreneurship can occur without a formal education in the subject. Lucas talks instead about the importance of developing "self-efficacy" (Bandura) in students i.e., a confidence in one's ability to carry out specific tasks which provide a foundation for later entrepreneurial activity.

I think YES does just that. It challenges 'students' to work in teams to prepare a business plan for an hypothetical but plausible service or invention thus giving them an opportunity to understand what innovation means and what one needs to do to innovate. This includes how to influence and work with, and alongside, other people. YES also opens up a window for students who want to understand their options when they have completed their training and who may be concerned about future employment as career scientists.

After all, BBSRC statistics from Q4/2010 show that only one-third of the post-doctoral researchers they had funded had gone on to win a lectureship. Those students who contemplate innovation may be giving themselves an advantage in the workplace as the view from industry is, not surprisingly, to look for employees who offer new ideas and have a positive attitude. So participating in events like 'YES' can be a useful differentiator on a CV.

Genecom has worked with younger scientists since 2004 to encourage an understanding of the process of innovation. When we set out we didn't know how

to pass on the ideas behind effective commercialisation of research and many of our young scientists that we approached with offers of help were not interested in commercialisation as they only wanted to be career researchers.

At the time, I didn't recognise the concept that has become known as self-efficacy. I was however, a strong believer that it's necessary to put into practice learned knowledge if it is to be relevant and long lasting and that simply telling scientists about innovation wouldn't work.

That's why Genecom became a supporter of 'YES' as I felt that it allowed uncommitted students to experiment in entrepreneurship. Not only this, but the skills necessary to be successful in YES are those needed to be successful in the workplace

The training Genecom offers is focussed on having the end in mind where the 'end' is a new product, process or service in the market place - or perhaps simply getting a colleague to do something effectively or in a timely fashion.

We try to stress the importance of benefit to the end user rather than a new feature and that it's important to look at demand as technology push often fails. We look at the market need and how to assess it and how to identify what the customer wants (if anything at all).

Of course we also emphasise the management and prosecution of IP but more so on how it can be licensed or used as collateral for start-ups and spin-outs and, in the latter case, we look at the investor paradigm and how to pitch for risk finance.

More recently we have added to our teaching over the years as a consequence of the demand for ways of developing strong personal and intrapersonal skills from our students. We now look at effective team working, influence and avoiding conflict and how to manage our own work productively and that of our project team.

These seem to be the things that UK commerce also suggests are missing in our new graduates and for which Roberts funding was provided by Government. We have also looked at creative thinking and ways of stimulating new ideas and, most recently, we have introduced even more sessions on team dynamics such as avoiding dysfunctions that can occur in small teams, developing clear responsibilities within the team structure and reflective sessions on moving from academic science to business.

I don't believe one trainer can do this alone. Therefore we look to bring in specialists and to introduce students to successful (but sometimes unsuccessful) entrepreneurs, nearly all of whom are happy to pass on what they have learned from their own experiences.

However, I think we need to move on. We need to show our scientists how to articulate the demand for science and its benefits and, in particular, the economic benefit in the widest sense. If they can do that, it makes sense that they can win

the translational grants and risk funding they may need. Perhaps we need to find different ways of teaching; I've seen good web-based teaching and game play advocated by delegates at meetings held by the Higher Education Group ([www.HEEG.org.uk](http://www.HEEG.org.uk)) which may be appealing to a more contemporary audience used to this type of learning.

We need to look at the concept of Open Innovation and to understand how we can link invention with innovation through sharing IP, assets and ideas. We will need to identify examples of how this has worked in practice.

While students appear to be increasingly entrepreneurial and enterprising some, despite learning the entrepreneurial skill-set, may not want to be entrepreneurs or to innovate themselves and may simply lack the time to innovate.

Mike Southon the author of the popular series of business books 'The Beermat Entrepreneur' uses the term 'Cornerstones' to describe people with different competences and aptitudes who can help in the translation of bench science if they can get involved. He also talks about the importance of mentoring. Collectively, this seems to be referred to as Thought Capital which is often advocated to be as valuable as risk capital. That implies we need to bring inventors together with networks able to help them innovate.

There is a view that students are increasingly demanding of entrepreneurship training. This seems to be particularly true of overseas students. Why is this? Do some young scientists draw a distinction between business and science? Does it come down to the culture of the Institution employing the scientist?

I know examples where young scientists have been actively dissuaded when they show an interest in commercialisation and others where it has been assumed that because the nature of the research is product focussed, the scientist is already 'commercially aware'.

Clearly then, there is a role for widening initiatives suggested by the Council for Industry and Higher Education and NESTA for all of our universities, PSREs and HEIs that encourage and develop entrepreneurial and enterprising scientists i.e., people that can contribute to the economy and society, affect change, address major societal challenges and develop their own economic and social capital (NESTA 2005).

The UK needs enterprising individuals to innovate both within businesses and by starting their own companies. Genecom hopes to develop confidence in young scientists who want to work with us and a self-belief in their ability and to provide a foundation for future entrepreneurial activity.

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