

## Educating the Innovators of the 21<sup>st</sup> Century

### The project brief

Arrangement of a seminar as part of the International Symposium of Engineering Education (ISEE) 2012 conference. Invited Speaker Eric Mazur devotes part of his research group's efforts to education research and finding verifiable ways to improve science education. In 1990 he began developing *Peer Instruction* a method for teaching large lecture classes interactively. He modeled the method at an evening seminar held at St George's church.

### Key impacts

It seems that the public lecture by Prof. Mazur coupled with all the presentations at the ISEE 2012 conference have provided the impetus for change amongst a lot of colleagues not only from the Faculty of Engineering but the wider University and further afield. The change will materialise in more use of 'technology in classes' as well as a complete re-think of the way we teach.

### Outcomes observed

The links formed at the conference led to Dr Plato Kapranos travelling to Italy to deliver a presentation with 'clickers' in Brescia. The feedback received demonstrated the positive impact of ideas sharing and networking with international colleagues:

"Indeed your seminar impressed me a lot. I was thinking to test the ideas with PhD student seminars or small classes. Let me know if there is an Italian contact point of Turning Point Technologies so I can see the opportunity they can offer us. Thank you very much. I believe you can make the difference in Teaching & Learning with your presentation! Best regards, Prof. Laura Depero, University of Brescia."

### The legacy

The use of electronic voting devices has increased across the University as a whole and in the Engineering Faculty in particular - all UG students have their own personal device at the start of their courses which they use in the Global Engineering Challenge to assess the work of their fellow students.

Currently the Engineering Faculty is looking into the use of mobile phones and i-pads in a similar way. Innovation in the classroom is mushrooming.

## **Enterprise**

This was the 4th International Symposium of Engineering Education - ISEE 2012, 'Educating the Engineers of Tomorrow'. The next conference will run at the University of Manchester in the summer of 2014 and the University of Sheffield will be part of the organising committee.

## **Innovation**

Prof. Mazur gave a public talk about "Educating the Innovators of the 21st Century". He dispelled some of the myths about Teaching & Learning and proposed ways of making the classroom experience more interactive. He further expanded on the theme during his keynote at the ISEE 2012 Conference 'The Tyranny of the Lecture'.

## **Quotes and personal experience**

"I was fortunate enough to hear Eric Mazur's wonderful talk at your ISEE meeting in July and am keen to implement some of his ideas into my own teaching."

"Despite being a PhD student and the material not being directly relevant to me I found the majority of the talks extremely interesting with good lively debate."

"Frankly, I feel that many of the ideas presented by Prof Eric Mazur need to be taken more generally over the whole of the institution! There are far too much of the 'lecture' / set unseen exam questions around. Very few 21st century education ideas (such as Mazur uses) seem to me to be incorporated in teaching. This is not just a Sheffield failing, it is sector dominant but Sheffield is missing a trick if it does support students more, this is not just about giving more lectures and tutorials as some institutions seem to think."

"Be patient with those who try to introduce innovations in teaching and assist us with our workloads."

## **To find out more contact**

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