

## **CETL-MSOR Conference 2015**

### **Sharon Strawbridge: Overcoming Maths Anxiety; some practical ideas and personal reflections**

I want to discuss some personal thoughts and observations relating to how students (often from non-traditional backgrounds) cope with mathematics and the role maths anxiety has in stopping such students from fully engaging in STEM subjects, this has led from years of confronting this in my teaching and a HE-STEM funded project which I ran in 2012 and the subsequent legacy from this work at Exeter.

I have been motivated to try to understand what is behind these anxieties, because in common with all lecturers, I want to enable all my students to access the full curriculum I teach and I also don't like to see the personal distress this can cause.

In STEM subjects good maths skills are vital and over many years I have recognised there are particular groups of students for whom the transition to university maths is not easy and often this causes a huge amount of anxiety.

How well students adapt and cope with the first term/year of university has a huge effect on their subsequent performance across the years and fear of mathematics fear clouds this for some. For some students from non-traditional backgrounds, mathematics is often the weakness which can follow them across the years at university. I have recognised that maths anxiety is much more prevalent in certain groups:

- The students who come to university from school with alternate qualifications (BTEC etc.) to study STEM subjects
- The mature students who often come in via the Access route after years without study or may have done A level many years previously and just forgotten.
- Some of our international students who often don't ask for help or have a different educational background find when they get stuck they are anxious and don't want to look foolish

Help needs to be aimed at the individual and supporting them, by addressing their needs within a framework that was less formal and feels to the student more personal. Allowing them to engage with the maths in a less daunting and stressful environment.

The HE-STEM project involved training a crack team of PhD tutors to provide individual or very small group support, this approach was highly effective; key was getting the right PhDs involved they needed to be outgoing and sociable and able to put students at their ease. Most importantly, finding somewhere that was NOT a classroom situation to work is important. You need to find ways to reduce anxiety, defusing the situation, allowing space for learning.

I have met many students over many years and realise that fear of maths is very deeply instilled and almost worn as a badge that stays with the student, unless you can start to make them realise they can succeed and open the door for them, they

will continue to struggle and their bad experiences with maths (often from childhood) can haunt them and stop them even trying to overcome their difficulties.