

CETL-MSOR Conference 2015

Christine Pereira: Making statistics accessible to non-maths students: challenging conventions.

When teaching statistics in non-maths subjects a common methodology is to just plough through regardless of whether or not students understand what is being taught. There is set content which doesn't change year to year (that way slides don't need to be altered much) and there is a determination to adhere to the syllabus no matter how many students are left behind in the process. As a result, students' impression of the lecturer is 'you don't care if I learn and you don't care if I fail' and their attitude toward statistics is survival based – 'I don't need to learn it, I just need to pass the exam'.

The last 5 years of teaching subject specific statistics (and SPSS) workshops to non-maths students has made me question whether everything I am teaching is really necessary and whether teaching formula based statistics is the best approach (because this is the most common). I have experimented with reducing the amount of content covered as well as using a concepts-based approach, cutting out as much jargon as possible. The challenge in reducing content is ensuring that students come away with the necessary statistical skills. However, I have found it much more useful to teach a few very important statistical skills thoroughly, which students understand, remember and apply after the exam than cramming in lots of content which hardly anyone understands or remembers, and thus cannot apply, after the exam. Nowadays anyone can look up anything they want to know about statistics and SPSS on the web so knowing everything isn't essential. What is essential is that students understand basic concepts and have the confidence to find what they need to know when they need to know it.

In addition, non-maths students often lack confidence in maths and statistics which results in anxiety. Students' lack of confidence and anxiety needs to be addressed during the teaching sessions, and it should start in the first session. We need to encourage students to want to learn statistics rather than just survive statistics and we do this by coming alongside them in their learning process to show we actually care that they learn what we are teaching!

The purpose of this talk is to reconsider what we teach and how we teach it:

- Needs based content – is it all really necessary?
- Concept based rather than formula based.
- Tackling the fear of statistics