

Neil Sheldon

We need to talk about statistics

The purpose of statistics is insight not numbers

In recent years, statistics teaching has seen a welcome move away from formulae and calculation. Especially with the rise of ‘big data’, numerical processing is increasingly being done with software, and it is becoming much more important for students to learn the art and science of interpretation. This development requires teachers to change focus too, shifting their emphasis from numbers to language.

As with many academic disciplines, statistics overlays everyday language with specialist meaning: one familiar example is the word ‘significant’ which means very different things in everyday use and in statistics. Research shows that parallel meanings such as this make it harder for students to understand technical concepts. Research also shows that teaching with a richer vocabulary can help to overcome this problem of understanding.

But statistics is more than just an academic discipline, it is a vital element of citizenship: we all need statistical understanding to make sense of the world around us. Yet statistical data are routinely misunderstood and misinterpreted in the media. In most cases the errors arise, not from the numbers themselves, but from the confused and inaccurate language used to comment on them. Clear language is essential to clear thought.

This lecture, drawing on numerous practical examples, will explore the ways in which careful use of language can help everyone – teachers, students and citizens – to understand statistics better, whether in formulating enquiries, interpreting data, or reaching trustworthy conclusions and communicating them effectively.

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The Teaching Statistics Trust Lecture, (teachingstatisticstrust.org.uk), is given annually at several locations in the UK. It is aimed at teachers of statistics, whether specialist or non-specialist, in secondary schools, colleges and early years of university.