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Teachers and textbooks: on statistical definitions in senior secondary mathematics.

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Summary: The new “Australian Senior Secondary Curriculum: Mathematics” contains more statistics than the existing Australian Curricula. This case study examines how a group of Queensland mathematics teachers define the word “statistics” and five statistical terms from the new curricula. These definitions are compared to those used in some commonly-used Queensland mathematics textbooks and in the glossaries of new “Australian Senior Secondary Curriculum: Mathematics”. The findings of this study suggest that many teachers do not have a good understanding of statistical concepts and that they rely on procedural definitions (instrumental understanding). This is reflected in the presentation of statistics in Queensland senior secondary mathematics textbooks. Definitions in the glossaries of the new curricula are generally better but perhaps other simpler concepts could be introduced first to develop relational understanding.

Classification: K14 D39 U24

Keywords: stochastics; statistics; mathematics curriculum; upper secondary; relational understanding; educational research; subject content knowledge; statistical concepts; professional development; teacher education; textbook analyses

<http://ww2.amstat.org/publications/jse/v23n3/dunn.pdf>