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Engaging the University 100 level audience – How to teach statistical thinking to students from a mixed background

At the University of Canterbury we have undertaken a major change in the way we deliver the 100 level statistics service course. The new-look course emphasises statistical thinking over methods and computation. The catalyst for change was a recognition that most (~99%) of the students take the course for general interest and the support of other majors, and very few are planning to major in statistics. In the process of managing the change we asked: "Given a limited time frame for delivery, what are the essential statistics skills your bank manager/car salesman/primary school teacher needs to have?" Ultimately we moved from teaching the statistics skills needed for a statistician to teaching those skills needed for a manager/scientist/'informed consumer' in today's society.

The way the course is now delivered provides lesser emphasis on lectures as the main way of delivering the course (and students' learning experience) and greater on mastery: computer based tutorials (using a Learning Management System), use of Excel's functionality as the ubiquitous tool and on-line skills testing; with written assignments to ensure synthesis and statistical thinking.

With more than 1100 students enrolled on the three occurrences of the course in 2009 we have some interesting observations and experiences to share from the experience to date. Students have been given the opportunity to provide input to surveys at three points in the course: at the outset, to provide a large data set to use in teaching and learning, to engage the students; for formative feedback half way through and for summative feedback at the end of the course. The students' ownership of their learning, opportunities to give feedback, work on-line at their own pace and in their own time, take tutor help if needed and ask for further learning resources moved the focus towards student-centred learning and away from passive to active participation.