Examining the impact of visual teaching and learning strategies on undergraduate students self-reported experience of quantitative research methods teaching: update from the Loughborough Project

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Examining the Impact of Visual Teaching and Learning Strategies on Undergraduate Students Self-reported experience of Quantitative Research Methods teaching: Update from the Loughborough Project

“Exploring visual aspects of data helps students to learn basic statistics concepts”.

Dr Martyn Chamberlain, PI
Dr John Hillier, Co-Investigator
Dr Paola Signoretta, RA
Outline

- Background
- Progress summary
- Example of visualization
- Emerging key messages
- Next stages
- Questions?
Background

- Social Science Students and Maths Confidence.
  - International Benchmarking Review of Best Practice in the Provision of Undergraduate Teaching in QM in the SS (2008); MacInnes (2009; 2012)
  - “Exploring visual aspects of data helps students to learn basic statistics concepts”.
- Focusing on Visualisation and Learning Statistics
- QM Induction Course
- Data Collection
Progress Summary

- Data Collection and Research Partners Update
- Induction Module Design and Portfolio-based assessment
- ArcGIS and Hypothesis Generation:
  - Thematic mapping,
  - Multivariate mapping,
  - Cartograms, and
  - Cluster analysis;
- Piloting the ArcGIS Crime Analysis Case Study
**Key Messages**

* Loughborough Baseline Data:
  * Anxiety but willingness to learn, and appreciation of relevance;
  * Current statistics self-efficacy: no confidence at all or a little confidence;
  * Confidence in learning: slightly better than confidence in current ability.
  * Visualisation would help them learn statistics.

* ArcMAP Pilot
  * Involve students in the pedagogic development process;
  * Guide students in the learning process using a visual approach (rather than expect them to learn by just looking at data);
  * Ensure visual technology facilitates rather than hamper learning.
Next Steps

* Data Collection

* ArcMap Pilot 2 and Module Finalization for 2013/14 academic year.

* Visualization may help students to prepare for a QM module.

* Any questions?