

L&T:21

Showcase – Stream 1 Stream 2

Nov 17, 2021



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Showcase 1: Stream 2

Vince Mitchell
Professor and Head of the
Marketing Discipline at The
University of Sydney Business
School



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Showcase 1

Can we ask our staff and more importantly our students to embrace a paradigm shift in assessment frameworks?

— Cameron Esslemont



Question?



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Showcase 2

Embedding authentic assessment for foundational business statistics

— Anastasios Panagiotelis,
Andrey Vasnev & Jessica Tyrrell



Embedding authentic assessment for foundational business statistics

- ☐ Why did we re-design the assessment?
- ☐ What was 'authentic' about the new assessment?
- ☐ What was the design process? How did we leverage technology for scale?
- ☐ Student feedback so far?

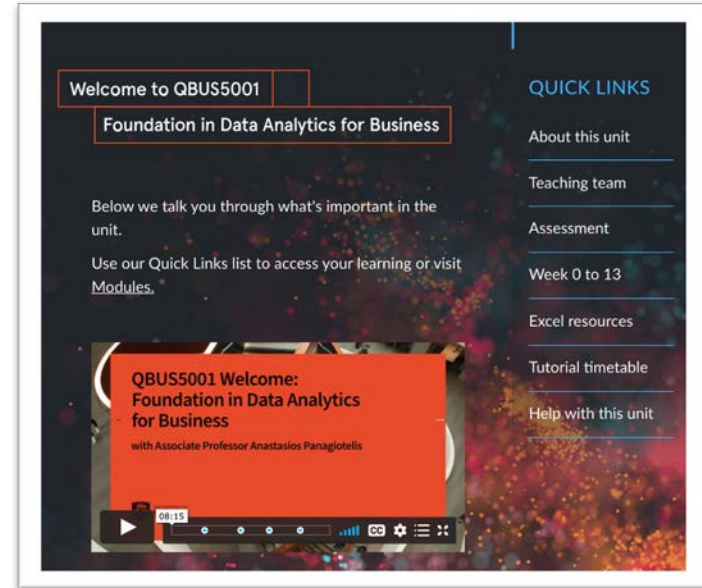
QBUS5001 Foundation in Data Analytics for Business

Foundation unit in Masters of Commerce BA specialisation

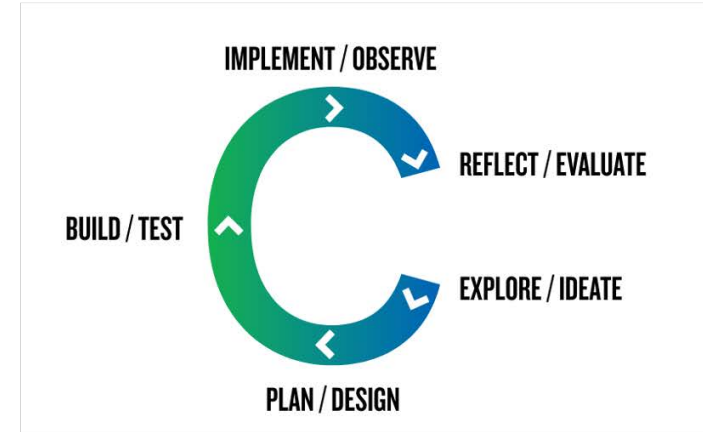
700 - 1600 average student cohort

Increasing student numbers

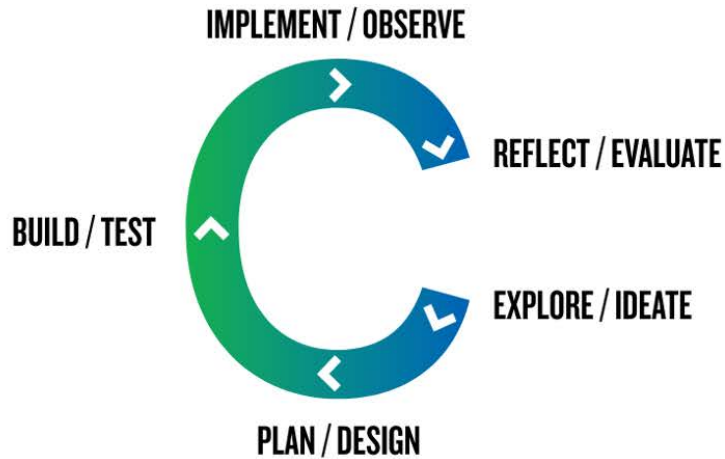
High percentage international students



Connected Learning at Scale (CLaS)



Iterative cycles of development



- Enhanced Canvas site including CLaS visual design for improved navigation.
- Introduction of live Q&A session.
- Embedded authentic assessment, including peer review opportunity and group work.
- Self-paced, interactive Canvas modules with watch and learn videos, interactive diagrams and “check your understanding” interactives.
- In-house quizzes with R-exams algorithmically generated banks.

Why did we re-design the assessment?

What students said

*"I feel like I'm learning statistics, but not **statistical thinking**"*

- student quote from CLaS co-design workshop

Supporting ULOs

LO1. build a strong quantitative skill set for business decision making; create statistical models for studying relationship amongst business variables; demonstrate proficiency in the use of statistical software for quantitative modelling

LO2. evaluate underlying theories, concepts, assumptions and arguments in business related fields

LO3. identify problems within real-world constraints and collect data for decision making; manage, analyse, evaluate and use information efficiently and effectively; demonstrate coherent arguments when recommending solutions

LO4. communicate confidently and coherently to a professional standard both orally and in writing

LO5. defend data integrity; analyse data and report results professionally and ethically.

What the literature says

Research and guidelines for statistics education consistently highlight the importance of situating statistics learning in **real-world contexts** and exposing students to **real data problems** (GAISE, 2016).

Such approaches have been shown to support student development of critical skills including statistical reasoning and data literacy (Brown, 2019; Cummiskey et al., 2020).

What the new assessment looked like

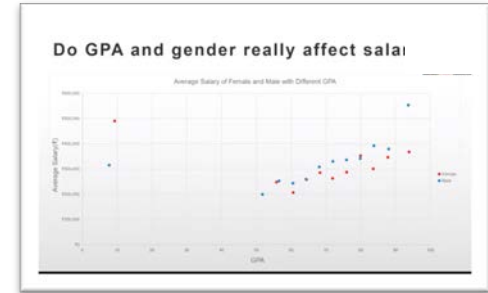
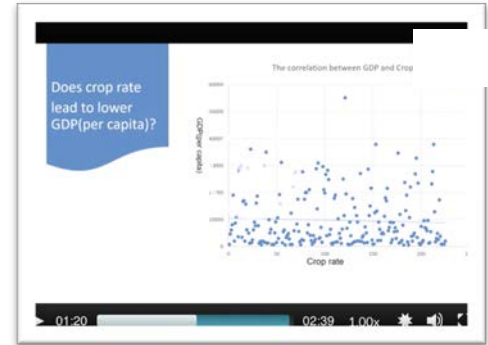
“Main Assignment” worth 25%

Part 1 Individual component + peer review

Students select a data set, perform analysis and produce a 3-minute video communicating their analysis.

Part 2 group component

Students come up with an interesting question about the data set and submit a 500 word executive summary communicating their analysis and findings.



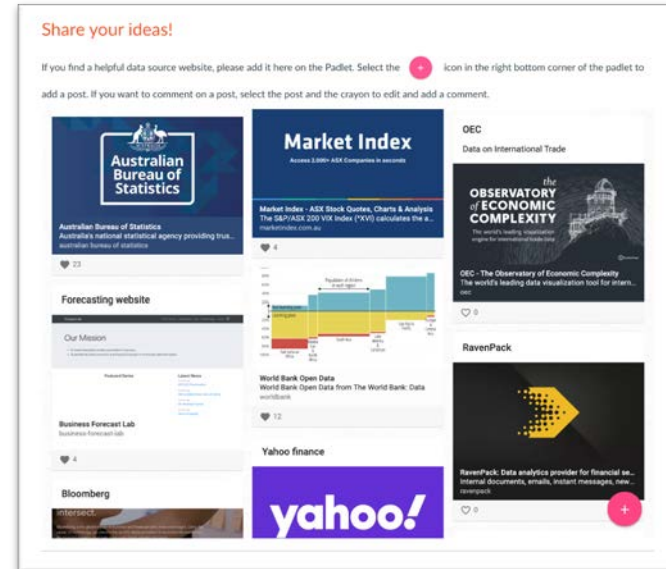
Examples of student assignments

What is 'authentic' about the new assessment?

Authentic assessment aims to replicate the tasks and performance standards typically found in the world of work, and has been found to have a positive impact on student learning, autonomy, motivation, self-regulation and metacognition; abilities highly related to employability.

Villarroel et al. 2018

- Real data
- Student choice
- Real questions and complex problems
- Multi-modal (presentation and report formats)
- Team-based learning
- Peer review



Authentic learning materials with real data + student sharing

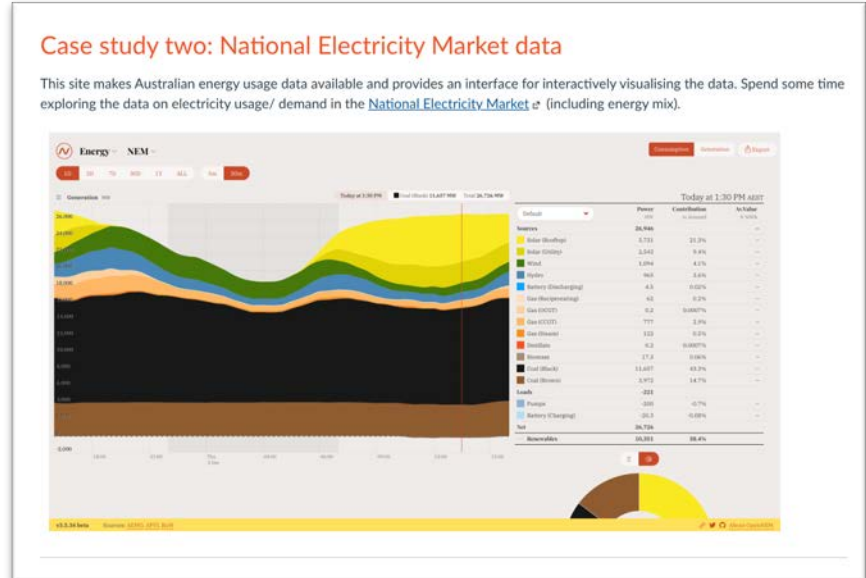
Assessment design process

Co-design approach: interdisciplinary team.

Updated online learning materials with more 'real' data examples.

Introduced Data Communication modules with practical information on sourcing and cleaning real data sets.

Detailed rubrics co-designed by core teaching team and tutors.



Authentic learning materials with real data

Leveraging technology to address challenges of scale

Keep It Simple Stupid approach to implementation

Canvas rubrics to support marking and feedback.

Peer review auto-assigned via Canvas.

Canvas groups self-sign-up.

Formative Progress Report ahead of final submission.

Criteria	Ratings				Pt
Write for Transfer Student	1 pts High Distinction Variables and units of measurement are clearly defined. Other features of the data provided (e.g. when/how data collected)	0.5 pts Distinction Variables are described but with some shortcomings, e.g. units of measurement not provided	0.2 pts Credit Variables and/or units of measurement are simply listed with no extra description	0.1 pts Pass Variables not mentioned/inference only made for "V" and "U" variables	1.0
Write for Information of data (for another audience)	1 pts High Distinction Transformations applied to data or outliers excluded. This is made clear and the reasons for doing so are explained.	0.5 pts Distinction Transformations applied to data or outliers excluded. No reasons provided for why this was done.	0.2 pts Credit No transformations applied to data or outliers excluded	0.1 pts Pass No transformation of variables or inclusion of outliers applied, even though there is clear reason why this should be done	1.0
Write for Missing or Data availability	1 pts High Distinction Missing data or data availability discussed, demonstrating insight into data	0.5 pts Distinction Missing data or data availability identified but not explained	0.2 pts Credit Missing data or data availability not explained	0.1 pts Pass Missing data or data availability not explained, even though there is clear reason why this is relevant	1.0
Write for Transfer Student	1 pts High Distinction Presenter speaks clearly and at a consistent pace, uses helpful points to support discussion, rather than simply reading from text and makes no error in describing the plots	0.5 pts Distinction Presenter suffers from one of the following: (1) Speaker has too many notes, speaking tempo; (2) Simply reads out words on slides; (3) Excessively describes plots; (4) Too many words on a slide	0.2 pts Credit Presenter suffers from one of the following: (1) Speaker has too many notes, speaking tempo; (2) Simply reads out words on slides; (3) Excessively describes plots; (4) Too many words on a slide	0.1 pts Pass Presenter suffers from one of the following: (1) Speaker has too many notes, speaking tempo; (2) Simply reads out words on slides; (3) Excessively describes plots; (4) Too many words on a slide	1.0
Write for Connecting to the Data	1 pts High Distinction Description of plots linked to actual data. An explanation with particularly strong insights, e.g. speculation on how correlation may be determined by another variable not in the dataset	0.5 pts Distinction Description of plots linked to actual data, e.g. an explanation is provided for why a trend for one group is higher than another	0.2 pts Credit Description of plots linked to actual data, but no further explanation, e.g. correlation left unexplained but without giving a reason why correlation left to determine may be present	0.1 pts Pass No attempt to link description of plots to actual data, e.g. when it's a 'V' instead of variable names	1.0
Write for Information of an existing question	1 pts High Distinction At least one interesting question is identified that can be analysed using correlation. The current plots are used that provide insight about the question. Furthermore, speculation is provided as to why the question is important for a business/company	0.5 pts Distinction At least one interesting question is specified that can be analysed using correlation. The current plots are used that provide insight about the question	0.2 pts Credit At least one interesting question is identified that can be analysed using correlation. However the plots used in the analysis are not appropriate plots for providing insight about the question	0.1 pts Pass Presentation does not identify an interesting question that is addressed by the visualization	1.0
Write for Data Story (Video)	1 pts High Distinction Data story and data are informative and all important information is included (including units of measurement)	0.5 pts Distinction Data story and data are informative but some important information is omitted	0.2 pts Credit Data story and data are both provided but in a non-informative way, for example "V" rather than variable	0.1 pts Pass Data story is not included	1.0
Write for Transfer Student	0.5 pts Distinction Plots are well designed so that there are no clear instances of bad practice in visualization including but not limited to: (1) clutter, (2) too many variables, (3) overly or excessive use of 3D rendering, (4) overplotting	0.2 pts Credit Plots suffer from two instances of bad practice in visualization including but not limited to: (1) clutter, (2) too many variables, (3) overly or excessive use of 3D rendering, (4) overplotting	0.1 pts Pass Plots suffer from three or more instances of bad practice in visualization including but not limited to: (1) clutter, (2) too many variables, (3) overly or excessive use of 3D rendering, (4) overplotting	0.05 pts Pass Plots suffer from three or more instances of bad practice in visualization including but not limited to: (1) clutter, (2) too many variables, (3) overly or excessive use of 3D rendering, (4) overplotting	1.0
Write for Clarity of the	1 pts High Distinction Uses different types of plots used to analyse data, at least one of these displays three variables by using colour or point size/shape	0.5 pts Distinction Uses different types of plots used to analyse data that show different information	0.2 pts Credit Uses different types of plots used to analyse data that show similar information (e.g. a histogram and barplot of the same variable)	0.1 pts Pass All plots are of the same type (e.g. different variables are used)	1.0
Write for Shortcomings	1 pts High Distinction Shortcomings of analysis are discussed in a particularly insightful way that relates to the data itself	0.5 pts Distinction Shortcomings of analysis are discussed but in a superficial way that is not connected to the data (e.g. some vague statement about a bigger sample being required)	0.2 pts Credit No discussion of shortcomings of analysis	0.1 pts Pass Obscure discussion that suggests an improvement to the data	1.0

Rubric example

What students told us

For the main assignment in this unit, you worked with real data – first individually, and then in groups. Do you prefer this type of assessment to a traditional exam or quiz?

70% of surveyed students (n=40) agreed or strongly agreed

“Working this real data

motivates me. Also it satisfies my own interest that I can apply techniques in this course to areas I'm interested in”

“I can put what I learned from QBUS5001 into practice”.

“Assignments are preferable to exams as they are more aligned to a real world task”.

“This kind of design ensures the student have truly understand the content of the module, so that we can have a better cooperation with other members”.

What students told us

What was the most meaningful or memorable aspect of QBUS5001?

“I find the most meaningful thing is the data visualisation. Because now I’m working in an NGO and I’m using those skills that I learnt in this course to actually visualise our clients’ data. And how we write that in our annual report”.

Thank you!

Question?



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Other sessions on now

See the L &T Forum website for zoom registration links to the next concurrent sessions:

■ 1:25 – 2.10pm

Showcase – session 2- Stream 1:
Zoom meeting ID - [862 7108 8599](#)

Showcase – session 2- Stream 3:
Zoom meeting ID - [898 6343 8553](#)



Next sessions

See the L &T Forum website for zoom registration links to the next concurrent sessions:

■ 2:15 – 3.00pm

Showcase – session 2- Stream 1:
Zoom meeting ID - [884 6479 9274](#)

Showcase – session 2- Stream 2:
Zoom meeting ID - [870 7274 0287](#)

Showcase – session 2- Stream 3:
Zoom meeting ID - [813 2506 0329](#)



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