

We all need to be *numerati*: fostering quantitative literacy in higher education

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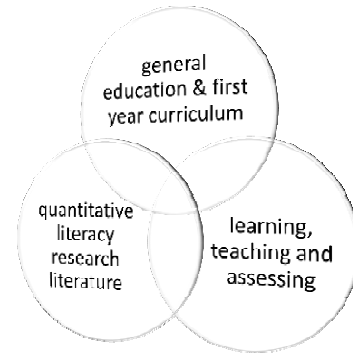
Quantitative Literacy (QL)

The ability to know when and how to work with numbers in particular contexts, as well as to critically evaluate and communicate the results. *Important contexts include citizenship, cultural, educational, personal finance, personal health, management and work.*

What can we learn from the literature?

Boaler, D'Ambrosio, Frankenstein, Gutstein, Lesser, Noyes, Schield, Skovsmose, Steen, ...

The objective is to draw on the QL research literature to inform the first year curriculum, and to evolve and describe a pedagogy for teaching and assessing for QL. This will go beyond the vocational aspect of higher education's mission to cultivate *numerati*, quantitatively literate citizens who can understand, judge and act in a world full of numbers.



Numerati: understand fully the question, critically evaluate the answer



Good practice from the QL literature

Coming to good decisions requires everyone to be comfortable with numbers. QL is a crucial means to interpret the world. When teaching for QL:

- ✓ attend to working in different contexts and establishing connections
- ✓ use open-ended authentic problems
- ✓ require students to explore unclear situations with quantitative techniques
- ✓ encourage critical interpretation and clear communication
- ✓ engage, challenge and motivate students
- ✓ harness technology to alleviate mathematics anxiety and reduce calculations burden

Integrating into teaching practice

Moving the emphasis from calculations to understanding, from quantitative techniques to quantitative literacy using the following approaches:

- ✓ in-class activities with peer discussions
- ✓ activities based on student generated data using clickers and online surveys
- ✓ short written assignments
- ✓ team projects – reports and presentations
- ✓ guided discovery using interactive online activities
- ✓ online formative assessments

to discuss and share ideas, contact

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