



UniSA

# The adult numeracy conundrum

Dr Chris Klinger  
University of South Australia  
[chris.klinger@unisa.edu.au](mailto:chris.klinger@unisa.edu.au)

- decades of investment on efforts to improve functional numeracy skills in workplace and beyond
  - programs
  - initiatives
  - funds
- intractable problems
  - poor adult numeracy skills
  - overt adult innumeracy
  - little real change in adult numeracy rates



UniSA

...this is the  
***adult numeracy***  
***conundrum***

# 'paradigm shift'

- Thomas Kuhn  
(*The Structure of Scientific Revolutions*, 1962)
  - **originally**: describes a change in basic assumptions within the ruling **scientific** theory
  - **now**: represents notion of a major change in a certain thought-pattern
    - radical change in personal beliefs, complex systems or organizations
    - replaces former ways of thinking & organizing with radically different ways

## e.g. paradigm shifts in science

- from Ptolemaic geocentric cosmology to Copernican heliocentric system
- Newton's unification of classical physics into a coherent mechanical worldview.
- from Maxwellian electromagnetics to Einsteinian Relativity
- from Lamarckian theories of evolution (inheritance of acquired characteristics) to Darwinian theory of evolution (natural selection)
- acceptance of Plate tectonics to explain large-scale geologic al changes

- from Newtonian physics to Einsteinian Relativistic worldview
- from classical mechanics to quantum mechanics
- cosmology
  - from ‘steady state’ to ‘big bang’
  - from ‘big bang’ to inflation
  - conflict between quantum mechanics & general relativity
    - relativistic cosmology
    - string theory
    - *m*-theory
    - ‘*many worlds interpretation*’



e.g. paradigm shifts in social sciences *etc*

- ‘*social paradigm*’ (Handa)
  - focuses on social circumstances which precipitate such a shift
  - addresses how that shift affects social institutions, including the institution of education
- ‘cognitive revolution’ – from behaviourism to cognitivism
- economics – ‘Keynesian revolution’
- industrialisation – from field to factory; from artisan to mass production
- ‘*teachable moments*’ – the time at which learning becomes possible or easiest



UniSA

*a paradigm shift*  
is not merely a *breakthrough*  
  
...it's a  
*radical change of perspective*



# The problem of adult (in)numeracy...

- The 'standard model':
  - deficit & remediation
- Basic premise:
  - innumerate adults are 'broken' & need to be fixed
- Cause:
  - insufficient or inadequate school-based maths education
    - often related to educational disadvantage due to social, economic, cultural, and ethnic factors



# The problem of adult (in)numeracy...

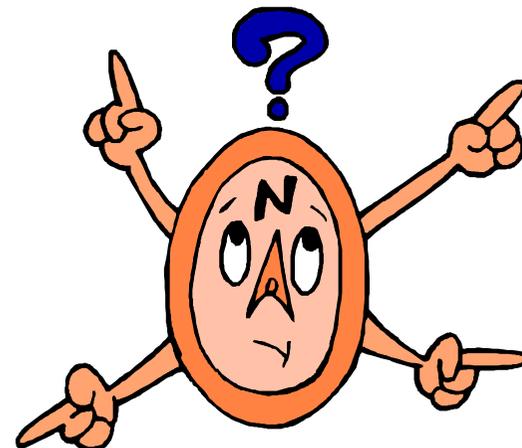
- ‘Solution’:
  - programs of ‘re-education’
  - school-like maths curriculum (may be disguised) in schools, colleges, community education, work-place training, on-line, etc
- Motivation:
  - to work better, to get work, or get better work
  - to manage finances
  - to help kids with homework
  - ‘critical citizenship’
  - social justice: opportunity, welfare, health, life expectancy
  - productivity gains
  - reduced liability/losses
  - gains in social & economic capital
  - more competitive workforce in market-driven global economy

But it's not working...

...why not?

# Factors & factions...

- numerous agendas, ideologies, and viewpoints
- numerous interested parties
  - ‘factions’, whose influences drive public policy
- factionalism
  - clouds the real issue
  - presents lots of ‘solutions’ but no answers



- Maybe it doesn't really matter that adults can't 'do fractions' or read graphs and charts (etc, etc) – society still gets along pretty well as it is and there are plenty of ways for adults to learn stuff *if they want to*.



## random thoughts...

- Maybe the problem doesn't actually reside with adult learners & the numeracy programs intended to help them. Maybe it's more to do with *who* sets the adult numeracy agenda, *what's* in it, the *purpose* it's supposed to serve, and how *outcomes* are determined...

- Maybe *the* ‘adult numeracy problem’ is a fiction – a consequence of how numeracy is conceived and assessed rather than a reflection of adults’ competencies in general. Numeracy issues are complex and multi-dimensional: the appearance of *the* adult numeracy problem is an illusion of aggregation.

- Maybe we can't actually resolve the adult numeracy problem by focussing on ('fixing') adults *now*. Perhaps the only real answer is to do a better job with maths education in schools – teach it better or differently so that future generations of school leavers become more numerate adults

- Ask the wrong questions and you'll have problems finding the right answers
- I don't want to know the answer to the 'adult numeracy problem'
- I want to know the *right* question to ask