



Current tensions in science assessment

Return of the GCSE

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GCSE Reform proposals



- Raise the level of challenge
- End of course examinations
- Remove transparency
- No examination aids
- Increase motivation
- Controlled assessment restricted
- Remove tiering

Diagnosis

‘I believe that a blinkered conceptualisation of curriculum, the strong trend towards fine-grained prescription, atomised assessment, the accumulation of little ‘credits’ like grains of sand, and intensive coaching towards short-term objectives, are a long call from the production of truly integrated knowledge and skill.’

Sadler (2007, p392)

- Bite-sized chunks
- Rote learning
- Formulaic examinations
- Teaching to the test

Behaviourist theory of learning

- Learning is demonstrated in behaviour
- Mental processes are not important
- Study of animals tells us about human learning (eg rats & pigeons)
- Learning as a reaction to stimuli in the environment, such as teaching

Behaviourist approach to assessment

- Control conditions
- Measure memory for facts
- Compare performance with criteria or norms
- Global score for performance on ability in subject area
- Norm- or criterion-referenced

Cognitive-constructivist theory of learning

- Learning occurs in the brain
- Cognition, especially meta-cognition important
- Memorisation of facts not so impressive
- Building of mental models of the world
- Integrate and build upon previous knowledge and learning
- Novice-expert differences

Cognitive-constructivist assessments

- Higher order skills
 - synthesis
 - Evaluation
 - Problem solving
- Extended tasks
- Assessed in terms of novice-expert continuum

Socio-cultural theory of learning

- Learning is a social event
- Learning is situated and context-dependent
- Learning is value-laden
 - Assessment as a social construct

Socio-constructivist approach to assessment

- Holistic, qualitative feedback emphasised
- Authentic tasks important
- Groups as well as individuals assessed
- Self- and peer-assessment important
- Engagement with criteria

On two metaphors for learning and the dangers of choosing just one

Table 1
The Metaphorical Mappings

Acquisition metaphor		Participation metaphor
Individual enrichment	Goal of learning	Community building
Acquisition of something	Learning	Becoming a participant
Recipient (consumer), (re-)constructor	Student	Peripheral participant, apprentice
Provider, facilitator, mediator	Teacher	Expert participant, preserver of practice/discourse
Property, possession, commodity (individual, public)	Knowledge, concept	Aspect of practice/discourse/activity
Having, possessing	Knowing	Belonging, participating, communicating

Sfard (1998)