Assessment and learning

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Argument

Assessments need to be congruent with our views of learning if they are to be valid

Questions for teachers:

- To what extent do the assessments available to me, or which I create, reflect the kind of learning that I aim to promote in students?

- If assessments lack congruence with learning, how can I try to bring them into closer alignment?
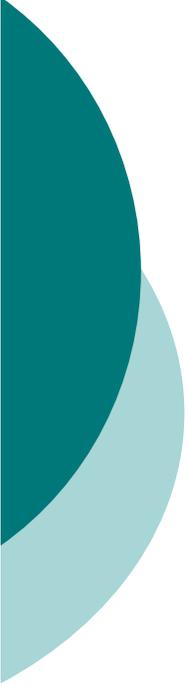
Three generations of assessment practice

Three generations of ideas about links between assessment and learning and their implications.

Headings adapted from Chris Watkins' (2003) descriptions of different views of learning:

- Learning is being taught
- Learning is individual sense-making
- Learning is building knowledge as part of doing things with others.

First generation: assessing learning of what is taught

- individual
- performance under test conditions.
- ability to recall facts and demonstrate skills.
- Tests or tasks are specially constructed - separate from learning.
- Preparation involves practice
- Time-limited
- No access to materials/resources
- Questions organised in a hierarchy of difficulty
- Responses assessed as correct or incorrect
- Comparison with other learners or against a standard
- Areas for improvement inferred from incorrect responses

Underpinnings:

Two different sets of assumptions underpin these assessment practices

'Folk' views of learning
- The brain or mind is a kind of vessel into which information is poured.
- Learning is assumed to have occurred when knowledge is 'retained'.
- Learner is passive.

Behaviourist views of learning
- Learning as conditioned response to external stimuli
- Rewards and punishments 'condition' desired responses.
- Repetition of the stimulus makes the response habitual – value of repeated practice.
- Eventually the response is so automatic that it can be produced at speed.
- Complex skill broken down into components, taught separately, then re-assembled.
- Economical to teach generic skills separately then applied in many situations.
- Learn basic facts and skills first

Second generation: assessing learning as individual sense-making

- Individual
- Problem-solving and understanding.
- Application of conceptual frameworks to find solutions to problems, and demonstrate cognitive skills.
- Specially constructed
- Tasks may be extended e.g. essays, open-ended assignments, projects, coursework.
- Often time-limited - problem solving with 'less search'.
- Some access to materials - less a test of memory than understanding.
- Assessed according to specified criteria - rarely one correct answer.
- Normal trajectory of progress can be described.
- Improvement comes from closing the gap between novice and expert.
- Areas for improvement inferred from misunderstandings

Underpinnings: Cognitive constructivist views of learning

- Learning is determined by what goes on in people's heads
- Building mental models of how the world works helps people interpret new information
- Active process of meaning-making.
- Emphasis on concepts
- Higher (or deeper) level processes such as comprehension, application, analysis, synthesis and evaluation
- Application of concepts valued for its capacity to reveal (mis)understanding
- Novices need help to acquire the ways of thinking possessed by experts - the ways they organize knowledge and the way they controlling their mental processes through metacognition - thinking about thinking.
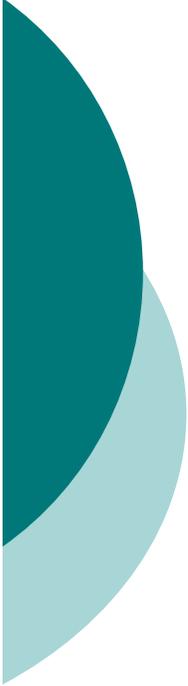
Third generation: assessing learning as building knowledge as part of doing things with others.

Not much evidence that this exists in schools

Underpinnings: The socio-cultural or 'situated' view of learning
- Learning involves both thought and action in context
- Thinking is conducted through actions that alter the situation and the situation changes the thinking - the two interact
- Learning is a mediated activity - tools and artefacts have a crucial role e.g. books, equipment, language and sign systems
- Learning is a social and collaborative - people develop their thinking together
- Learning is distributed within the social group e.g. language skill is not solely an indication of individual intelligence but the intelligence of the community that developed it
- The collective knowledge of the group is internalised by the individual. As an individual creates new knowledge, then he or she will externalise it in communicating it to others who will put it to use and then internalise it (an expansive learning cycle).
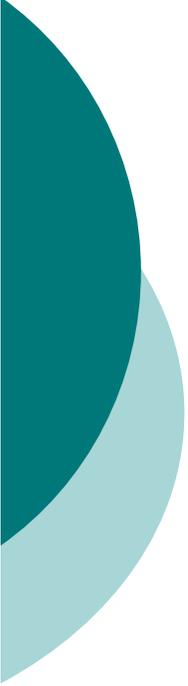
Implications for teaching

- Teachers need to create environments in which people can be stimulated to think and act in authentic tasks
- Access to tools is important
- Activities that a learner can complete with assistance so that the 'more expert other' can 'scaffold' learning.
- Tasks need to be collaborative
- Students need to be involved in the generation of problems as well as solutions.
- Teachers and students become a learning community and jointly solve problems
- Most valued outcome is engaged participation in ways that others find beneficial
- Problematic to judge an individual as having acquired knowledge abstracted from action settings

Implications for assessment

Pointers for third generation assessment:

- Assessment alongside learning, not as an 'after learning' event
- Done by the community - role for self-assessment, peer-assessment and teacher assessment.
- Assessment of group learning as well as the learning of the individual
- 'In vivo' studies of complex, situated problem-solving i.e. participation in authentic (real-world) activities or projects
- Focus on how well people exercise 'agency' in their use of the resources – proper justification for course-work assignments
- Achievement captured and reported through narrative accounts and audio- and visual media
- Portfolio has the potential to capture 'assessment as inquiry'.
- Holistic and qualitative judgement - not atomised and quantified as in measurement approaches.

Pros, Cons and Solutions

- **Pro:** attractive to employers who claim they are interested in recruits who can demonstrate their capability to work in teams to find creative solutions to complex problems.
- **Con:** raises questions about how to ensure the trustworthiness of such assessments when large numbers of students are involved and when those who are interested in the outcomes of such learning cannot participate in the activities that generate them.
- **Solution?** The apprenticeship model with its concept of the guild as the guardian and arbiter of developing standards.
- **Another Con:** within vocational education, systems of internal and external assessors and verifiers have attempted this although large-scale systems become bureaucratic, unwieldy and reductive.

Clearly, more work needs to be done

Conclusion

Can all three generations of assessment practice be housed under the same roof? Is inter-generational conflict inevitable? Do some have to be thrown out?

Overarching principles are 'fitness for purpose' and 'assess what you value rather than value what you assess'.

Assessment washback is powerful, especially in high stakes settings, so it is imperative to achieve a better alignment between assessment, teaching and learning.

There may be possibilities for *synthesis* whereby a more complete theory can emerge from blending and bonding of key elements of previous theories. Such synthesis may lead to a new alignment. The possibility for a more complete and inclusive theory of learning to guide practice of teaching and assessment seems to be a goal worth pursuing.