Introduction to Educational Theory

The Educational Paradigm

Aims

Assessment   Methods
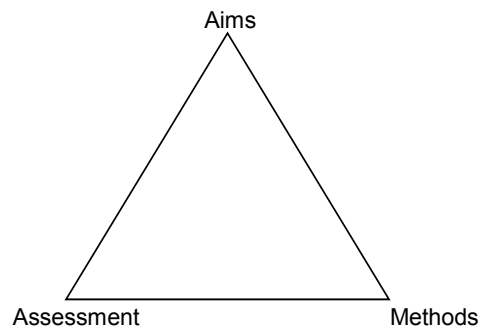
Notes
There should be a close relationship between the aims of a programme or session, the teaching methods used and the assessment of the student. Assessment can have a huge influence on the ways in which learners engage and it is therefore very important to ensure that the assessment methods are congruent with the aims and teaching methods. To an extent "assessment drives learning", but this is only a small part of the story.

Adults are intrinsically self-motivating, so long as their basic needs are fulfilled: this has important implications for methods of teaching. We learn because we are interested and curious, sometimes because it is helpful to know a particular thing and sometimes just for the joy of discovering and understanding. Roger Neighbour referred to this natural curiosity and unstoppable desire to learn as the "Inner Apprentice". He concluded that the teacher's role was to provide both support and challenge for the learner, rather than simply passing on knowledge through didactic teaching.

Intended learning outcomes
Some teachers like to consider in addition what the intended learning outcomes will be when considering their aims. "By the end of this session, the student will understand.., be able to….". Others point out that this can constrain learning and argue that a lot of learning is unintended. They would argue that simply to state an aim is enough and that specifying outcomes can reduce teaching to tick-box education. What do YOU think?

Example: Introduction to Teaching Course for GPs
Aim: To introduce participants to generic skills of teaching and learning
Intended Outcomes
- By the end day 1 particants will be able to undertake a learning needs assessment in preparation for learner-centred teaching
- By the end of day 2, participants will have practised giving feedback as part of learner-centred teaching
- And will know about the next steps as a teacher in primary care
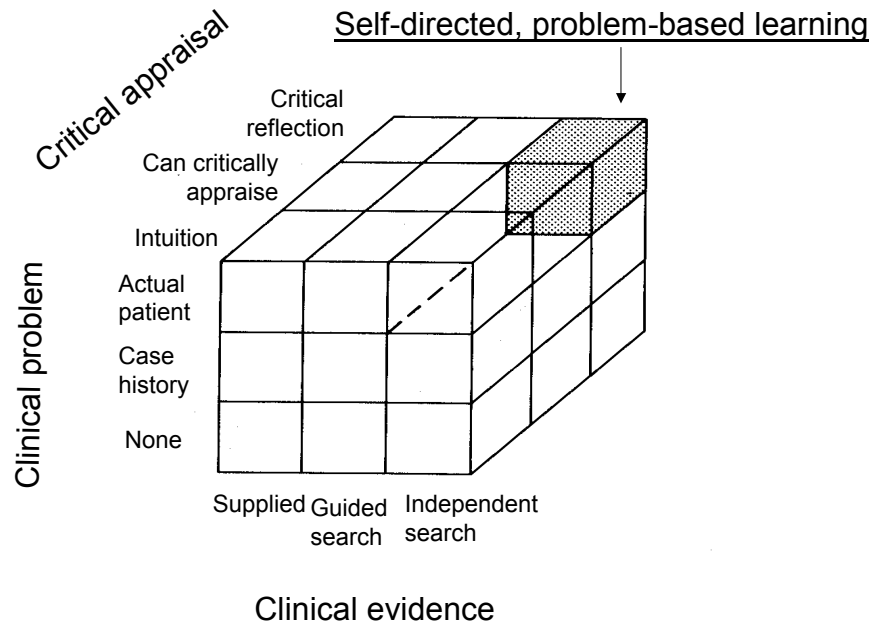
Further reading:
Neighbour, R. (1992) The inner apprentice, Newbury: Petroc.

Rees, C. (2004) The problem with outcomes-based curricula in medical education: insights from educational theory, Medical Education, 38: 593-598.

Royal College of General Practitioners (1972) The future general practitioner: learning and teaching, London: British Medical Journal.

Sackett's Cube

Self-directed, problem-based learning

Critical appraisal

Clinical problem

Critical reflection

Can critically appraise

Intuition

Actual patient

Case history

None

Supplied   Guided search   Independent search

Clinical evidence

After Sackett et al 1991

Evidence based education
3 independent factors contributing to effective learning:
- Whether learning based on real problem / patient
- Whether evidence is searched for independently by learner
- Whether critical appraisal skills are well enough developed to formulate implications for practice

Notes
Sackett's group introduced the idea of an "educational prescription", where the teacher's role was to work with the learner to produce a plan for problem solving based on real patients. The learner would then implement the prescription, finding out the evidence for themselves and therefore "owning" the resultant learning, rather than being "handed it on a plate".
Problem based learning has been introduced into many medical schools over the last ten years, usually based on group discussion of a case and employing heuristic methods in which students are encouraged to find out more about various conditions for themselves.

Reference
Sackett, D., Haynes, R., Guyatt, G., & Tugwell, P. (1995) Clinical epidemiology: a basic science for clinical medicine, Second edn, London: Little Brown and Company. pp 404-423

Teaching Methods

- Didactic   Telling
- Socratic   Questioning
- Heuristic   Promoting discovery
- Counselling   Exploring feelings

Notes

When vocational training for general practice was introduced in the UK, the Royal College of General Practitioners published a book called "The Future General Practitioner: Teaching and Learning" (Royal College of General Practitioners 1972). This extended the role of a teacher by going beyond the traditional method of passing on knowledge. Additional teaching methods were explored, in which the teacher was seen as a *facilitator of learning*, through questioning, promoting autonomy in the learner and encouraging learning through discovery and reflective practice.

The **Socratic** approach involves helping the leaner to become aware of the limits of his knowledge or his or her implicit values and beliefs through asking **awareness raising questions** (Neighbour 1992).

Heuristic teaching methods aim to encourage **discovery** learning. This respects the autonomy of the learner, a key component of learning theory, in which learning from experience is promoted (Knowles 1990).

Reflective practice fits well with **counselling** styles of teaching in which the teacher's role is to promote the **exploration of feelings, self-discovery and the examination of implicit assumptions** (Claxton 1996;Heron 1989).

Further reading

Claxton, G. 1996, Implicit theories of learning, in Liberating the learner, G. Claxton et al., eds., London: Routledge, pp. 46-56.

Heron, J. (1989) The facilitator's handbook, London: Kogan Page.

Knowles, M. (1990) The adult learner: a neglected species, Fourth edn, Houston: Gulf Publishing.

Neighbour, R. (1992) The inner apprentice, Newbury: Petroc.

Royal College of General Practitioners (1972) The future general practitioner: learning and teaching, London: British Medical Journal.

Awareness Raising Questions

Questions   Questions

Issues   Aims / Desired outcomes

Helping the learner
define his / her agenda
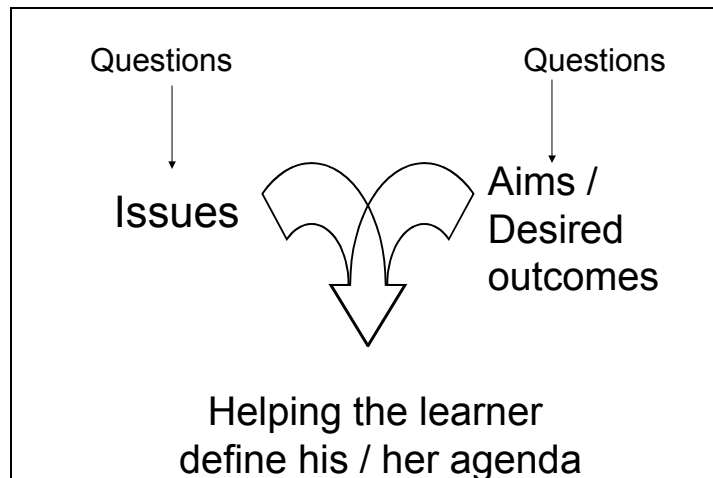
Cambridge Calgary Method

- A- Ask the group for help
- S- Specify aim /desired outcome
- D- Describe accurately
- A- Act out alternatives

Further reading

Neighbour, R. (1992) The inner apprentice, Newbury: Petroc.

Silverman, J., Kurtz, S., & Draper, J. (1996) The Calgary-Cambridge approach to communication skills teaching: agenda-led outcome based analysis, Education for General Practice, 7: 288-299.
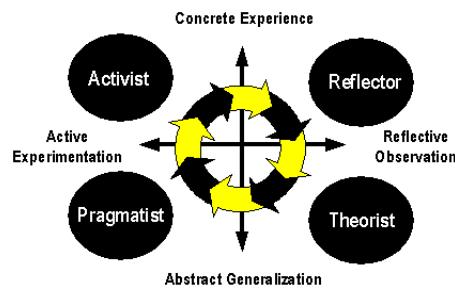
Kolb's Learning Cycle
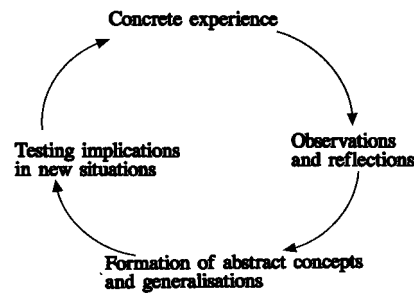
Honey and Mumford's Learning Styles

Activists: have a stimulus-hunger for new experiences
Reflectors: tend to ponder experiences and observe them from different perspectives. They tend to be cautious and consider all angles and
implications before making a move
Theorists: integrate new material and incorporate it into what was previously known. They are logical and tend to be perfectionists.
Pragmatists: try out ideas and techniques, to see if they work in practice

Constructed Learning

One of the implications of Kolb's cycle is that all knowledge is constructed through a process of reflective abstraction rather than simply being transmitted from teacher to learner without processing. Both cognitive and emotional structures within the learner facilitate this and are in a constant process of development. Learning is dynamic and new understandings are constructed by the learner from authentic experience. This "constructivist" viewpoint has roots in philosophy, psychology and social science as well as in education and seems less mechanical and more human than many of the purely cognitive approaches.

Learners are active in experiencing, exploring possibilities and alternative solutions, collaborating with each other, trying out new ideas, testing hypotheses and revising their thinking. Teachers are equally active players, engaging with learners, challenging them, finding out what motivates them, sharing their excitement, exploring new areas and evaluating the whole process.
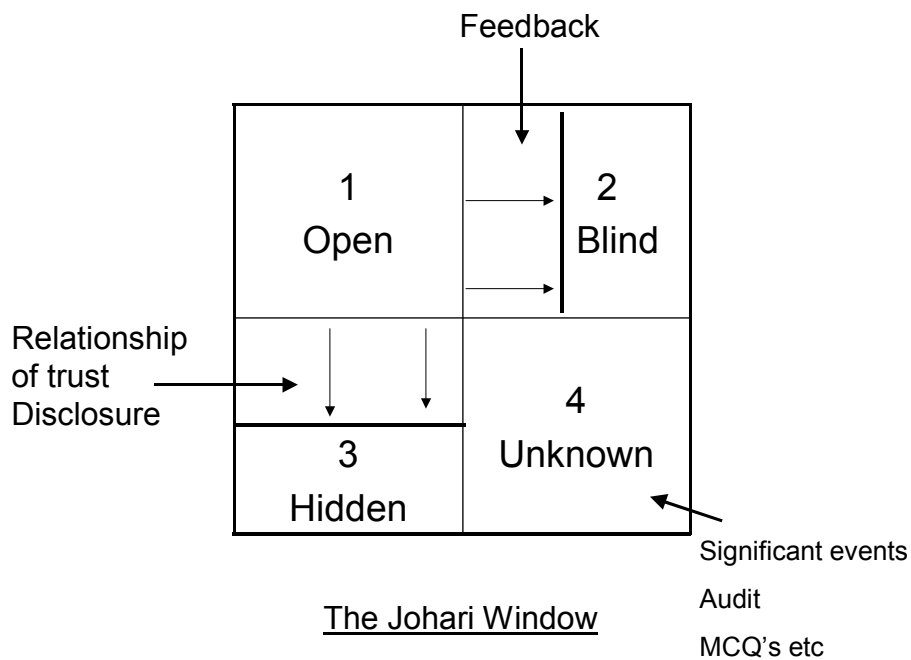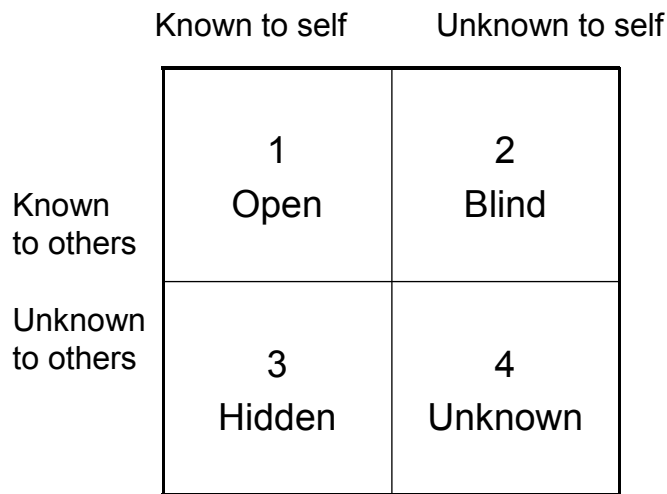
Further reading
Honey, P. & Mumford, A. (1986) The manual of learning styles, Maidenhead: Peter Honey.

Swanwick T (2005) Informal learning in postgraduate medical education: from cognitivism to culturalism, Medical Education, 39: 859-865.

Kolb, D. (1984) Experiential learning, New Jersey: Prentice Hall.

Learning Needs Analysis: The Johari Window

Known to self   Unknown to self

	Known to self	Unknown to self
Known to others	1 Open	2 Blind
Unknown to others	3 Hidden	4 Unknown

Feedback

1 Open	2 Blind
3 Hidden	4 Unknown

Relationship
of trust
Disclosure

Significant events

Audit

MCQ's etc

The Johari Window

Further reading:
Grant, J. (2002) Learning needs assessment: assessing the need, British Medical Journal, 324: 156-159.

Pietroni, R. (2001) The toolbox for portfolio development- a practical guide for the primary health care team, Oxford: Radcliffe Medical Press.

Rughani, A. (2001) The GP's guide to personal development plans, Abingdon: Radcliffe Medical Press.

Preparing for Teaching

"MMUCKO"

- Mood
- Motivation
- Utility
- Content
- Knowledge
- Objectives

"AILMENTS"

A	Aims
I	Intended learning outcomes
L	Learning needs analysis
M	Methods
E	Evaluation
N	Next steps
T	Testing (assessment)
S	Summary

Aims: Intended outcomes:	Time	Resources
Introduction and how to assess learner's needs		
Body		
Summary		

Learning styles

| Learning style	Learning Process	Motivation	Academic success	Encouraged by
Deep	Understand concepts	Personal interest	Good	Freedom to learn
Surface	Rote learning	Fear of failure	Poor	Factual exam
Strategic	Versatility	Competition Desire for success	Good	

## Bloom's Taxonomy of Educational Objectives

Level of learning	Description	Assessment objective	Typical words used in describing objective
Comprehension	Meaning	Understands	Explains Summarises
Application	Use in new situation	Applies	Demonstrates
Analysis	Break down into underlying principles	Recognises assumptions	Infers Explores
Synthesis	Form a new whole	Integrates	Categorises Combines, Modifies
Evaluation	Judge against criteria	Judges adequacy	Appraises, Justifies Critically analyses

Further reading

Bloom, B. (1956) Taxonomy of educational objectives, New York: McKay.

Newble, D. & Entwistle, N. (1986) Learning styles and approaches: implications for medical education, Medical Education, 20: 162-175.
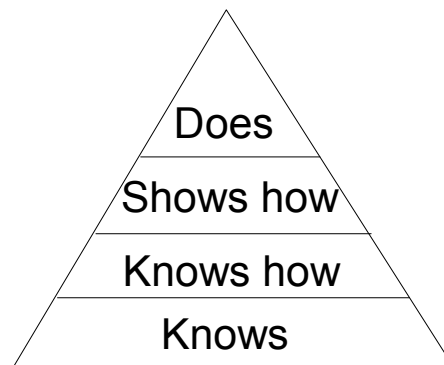
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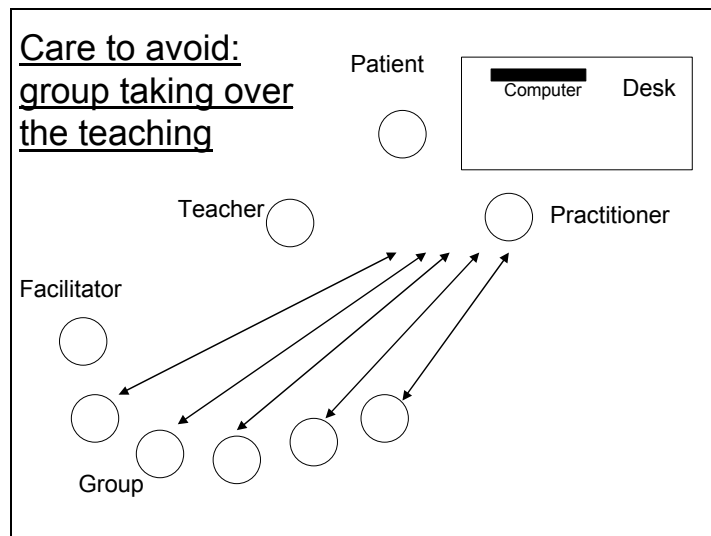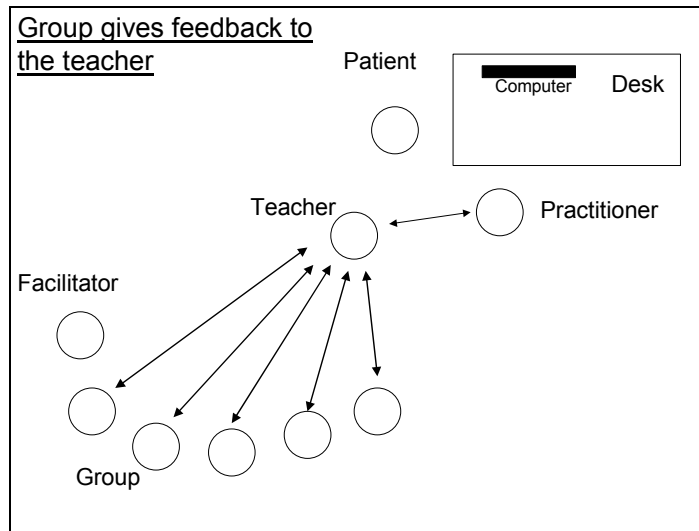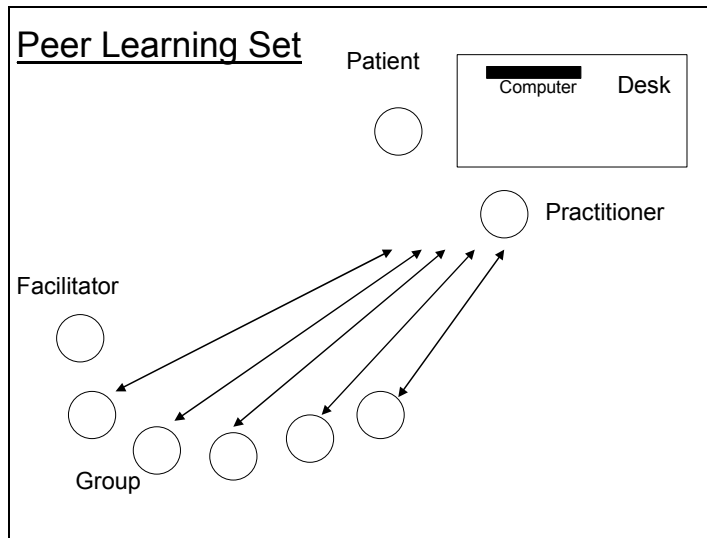
Principles of Assessment

- Validity
- Reliability
- Fidelity / authenticity
- Acceptability
- Practicality/ Feasibility

Miller's Pyramid of Clinical Competence

Notes

Miller's pyramid of clinical competence describes different approaches to assessment, based on the measurement of knowledge ("knows"), application of knowledge ("knows how"), skills ("can do") and performance ("does"). Moving up Miller's pyramid towards assessment of performance involves making increasingly valid judgements. The authenticity of an assessment is a concept that is closely related to validity, but significantly different in emphasis. It focuses on the links that the assessment has with usefulness in the real world, with ongoing formative assessment (assessment *for* learning rather than assessment *of* learning) and the closeness of fit between what is assessed and the aims of the programme. In other words, there is a high *fidelity* between the assessment and real life.

Assessment reliability is inevitably less as one moves up Miller's pyramid. In the Foundation Programme, for example, this issue is tackled and overcome to a large extent by using multiple assessments by multiple observers over time. This involves re-conceptualising reliability. Instead of a single high-reliability assessment such as a multiple choice questionnaire, which may be limited in terms of authenticity, multiple snapshots of performance are collected, each of which may be individually less reliable, but which taken together can be used to demonstrate the achievement of competencies and, most importantly, can be used to document improvement in professional performance over time

Further reading:
Clarke R (2006) Foundation Programme assessments in general practice
Education for Primary Care 17:291-299
Miller G (1990) The assement of clinical skills, competence and performance
Academic Medicine 65: S63-S67
Van der Vleuten,C (2000) Validity of final examinations in undergraduate medical training British Medical Journal 321:1217-1219