

Some theories, models and principles of learning in higher education

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Kolb's cycle of learning from experience

Kolb suggests that learning from experience results from going round a four-stage cycle, starting with experience, and then reflecting on that experience, then developing theories, models or explanations for what happened, and then planning some future action which will implement or test the theory, model or explanation.

There are many accounts and many variations – if you put ‘learning cycles’ into Google Images, you will see what I mean. Graham Gibbs offers a six-stage model. This begins with a description of what happened, then an examination of your feelings in response to what happened, followed by an evaluation and then analysis of what happened, before exploring what you might have done differently, and finally, action planning, in which you consider what you will do if faced with that situation again.

As a change from cycles, Phil Race offers a ‘ripples on a pond’ model, which offers four processes which interact with one another. At the centre of this model is the wish or need to learn, then there is the doing of the thing you wish to learn. Doing alone isn't enough, and Race's model shows that we have to digest what we learn, which is to say, we need to think about what we have been doing and reflect upon what worked and what didn't. And we also need feedback on our performance.

There are other useful variants, and still more waiting to be developed.

But the core idea of learning as a cycle (or, better, a spiral – see Bruner below) of purposeful activities, crucially involving reflection and feedback and then responses thereto, rather than learning as the imitation of a sponge, has enormous power and value.

The concept of a cycle provides a model of learning from experience, rather than just of learning through being taught. Being taught is only one of a vast number of possible experiences. Kolb shows us how learning may be extracted from experience. But Dewey (1938) usefully reminds us that ‘The belief that ... genuine education comes about through experience does not mean that all experiences are genuinely or equally educative.’

Original, early and/or major source:

Kolb, D. *Experiential learning*. (Upper Saddle River, NJ: Pearson Education, 1983).

Useful summary/introduction:

<http://skillsforlearning.leedsbeckett.ac.uk/preview/content/models/02.shtml>

Bruner's spiral curriculum

Bruner adds to Kolb's cyclical account the idea of progression, of upward movement, of experiencing and making sense of experience at successively more sophisticated levels, rather than going round in cycles, or becoming a larger and fuller sponge. Each turn round the spiral of action and reflection brings in more information, more ideas, more experience, and hence more learning.

Original, early and/or major source:

Bruner, J. *The process of education*. (Massachusetts: Harvard University Press, 2003).

Useful summary/introduction:

Johnston, H. ‘The spiral curriculum’, Education Partnerships, Inc. (2012)

<http://files.eric.ed.gov/fulltext/ED538282.pdf> accessed 02 February 2018.

Marton's deep and surface approaches to learning, with Entwistle et al.'s strategic approach

These are two different approaches or orientations to learning, rather than skills, personality types or kinds of learning. Briefly, a deep approach involves an intention to understand, and a surface approach involves an intention to memorise.

Many students can take either approach. What affects their choice? It is their perceptions of the assessment they are likely to face. Here we see how assessment can determine learning. Students who feel that the assessment simply asks them to repeat what they have read may think they only have to take a surface approach to learning. On the other hand, if they feel required to show a real understanding of the concepts, then they will take a deeper approach.

Entwistle et al. (1979) identified a third approach, which they call a strategic approach: an intention to obtain the highest possible grades, by whatever approach, deep or surface, seems to the student to be appropriate at the time.

Original, early and/or major source:

Marton, F. and R. Säljö, R. 'On qualitative differences in learning: outcome and process' *British Journal of Educational Psychology*, 46(1) 1976, pp.4–11.

Entwistle, N., M. Hanley and D. Hounsell 'Identifying distinctive approaches to studying', *Higher Education*, 8(4) 1979, pp.365–80.

Useful summary/ introduction:

'Student approaches to learning', University of Oxford: institute for the advancement of university learning (created October 2001)

https://www.learning.ox.ac.uk/media/global/wwwadminoxacuk/localsites/oxfordlearninginstitute/documents/supportresources/lecturersteachingstaff/resources/resources/StudentApproaches_to_Learning.pdf accessed 02 February 2018

I suggest reading the first six pages of this paper, as this is where you'll find the key ideas. You can then skim the rest to see illustrations on how the ideas play out in practice.

Schön, Cowan and Moon on reflection

As we introduced in Topic 2, we will expect you to reflect on your practice throughout this programme.

Kolb's learning cycle has reflection as a separate step, following action. This is pretty much equivalent to Schön's reflection **on** action, undertaken after action, with the intention of making sense of what happened, what was done and achieved, and to learn from this and, as appropriate, act the same and/or differently next time. According to Schön, reflection **in** action, by contrast, is the moment-to-moment monitoring of what we are doing and of the effects of what we are doing, and, again, drawing implications for action, but this time the implications are for immediate action.

Cowan usefully adds reflection **for** action. This is reflection with the primary intent of deciding what to do next time and how to do it. Reflection **for** action may be seen as the forward-looking part of reflection **on** action.

(For completeness, we should also mention the rather less productive academic habit of reflection **instead of** action.)

I suspect that learning happens faster with repeated turns round the cycle or spiral rather than with spending huge amounts of time and each stage. But I cannot back up this view. Reflection sometimes gets over-elaborated, even mystified, in the literature. But the heart of reflection is simple: it requires asking and answering questions, including 'What happened?', 'What did I do?', 'What happened as a result?', 'Did I achieve what I wanted to achieve?', and in each case, you need to be asking, 'Why?'. In addition, of course, you need to be asking, 'What do I learn from this?' and 'What implications do I draw?' The questions are simple, but very powerful, as we discover when we start to answer them. Both reflection and reflective practice are learnable and teachable. Moon (2009) gives a thorough account.

Original, early and/or major sources:

Schön, D.A. *The reflective practitioner*. (Aldershot: Avebury/Arena, 1995) New edition.

Cowan, J. *On becoming an innovative university teacher*. (Maidenhead: Open University Press, 2006).

Moon, J.A. *A handbook of reflective and experiential learning: theory and practice*. (London: Routledge, 2006).

Useful summary/introduction:

Imel, S. 'Reflective Practice in Adult Education', *ERIC Digest* (1992)

<https://www.ericdigests.org/1992-3/adult.htm> accessed 27 Apr. 2017.

Biggs' constructive alignment

There are two ideas here.

First, what should be aligned? The learning outcomes, the assessment methods and the learning activities. Indeed, as we illustrate in this course, the learning outcome and the assessment task can be the same – the ultimate in alignment. And learning activities should comprise components of the final outcome / assessment task, and/or simpler and then more complex versions of the assignment / assessment task, depending on the structure of the subject.

The second idea is constructivism. This is explored in the next section of this article, and elsewhere in the programme.

Original, early and/or major source:

Biggs, J. and C. Tang *Teaching for quality learning at university: what the student does*. (Maidenhead: McGraw-Hill/Society for Research into Higher Education/Open University Press, 2011) 4th edition.

Useful summary/introduction:

Biggs, J. 'Constructive alignment' <http://www.johnbiggs.com.au/academic/constructive-alignment/> accessed 02 February 2018.

Constructivism

I cannot improve on Kenneth D. Moore's (2012) description of constructivism on page 6 of his book *Effective instructional strategies: from theory to practice*, where he says, 'Constructivism ... says that students will construct their own understanding and knowledge of the world, through experiencing things and reflecting on those experiences.'

Constructivism has several parents, including Dewey, Bruner, Piaget and Vygotsky.

Constructivism is explored in depth in a later topic of this module, but we'll take a brief look at it now.

Constructivism is a powerful and a problematic concept. Obviously it doesn't mean that every learner has to invent from scratch everything that they are to know. That would take too long, and would place unreasonable intellectual demands on most of us.

But – for example – you could teach the legal concept of 'tort' in (at least) two ways.

You could say 'This is what 'tort' means ...'

Or you could lead a discussion of right and wrong, encourage students to make the distinction between civil and criminal wrong and get them to focus on the victim and their rights and needs rather than on the offender. In this way, in a few minutes, you can help them to invent the concept of 'tort'. Finally you could give it a name.

Would the second method take longer than the first? Yes, but only by a few minutes. Would students 'get' the idea of tort more effectively, more deeply, and more sustainedly by the second method? Probably yes, especially if they went on immediately to use the concept. Tort would be a living concept, whose origins and meanings and the need for which they could explain, rather than just another definition to be learned. Students, in this case students of law, have to be much more than dictionaries.

Useful summary/introduction:

'Constructivism (philosophy of education)' En.wikipedia.org (updated 01 February 2018) [https://en.wikipedia.org/wiki/Constructivism_\(philosophy_of_education\)](https://en.wikipedia.org/wiki/Constructivism_(philosophy_of_education)) accessed 02 February 2018.

Bloom and Krathwohl's taxonomy of educational objectives (cognitive domain)

This offers a taxonomy, a classification, of intellectual activity, showing an explicit progression. The current version starts at the lowest level with remembering, and progresses to understanding, applying, analysing, evaluating and finally creating. It is a valuable tool for analysing learning outcomes and assessment tasks. It is particularly valuable in encouraging us to raise our sights in education, to aim for higher-level capabilities. It is useful to analyse learning outcomes for courses against the Bloom taxonomy, and then relate this analysis to QAA level descriptors.

But Bloom's taxonomy also has limitations as a tool for analysis. It can badly mislead us around assessment and is often misused to disastrous effect in course design through the near-fatal belief, promulgated by Bloom, that learning must necessarily start at the lowest level, which is remembering. Kolb, Schön et al. persuasively suggest the learning can start anywhere. You can explore these issues further in two of my blog posts:

- Baume, D. 'Learning and knowledge – Bloomin' obvious?' (created 28 September, 2015) <https://davidbaume.com/2015/09/28/learning-and-knowledge-bloomin-obvious/> accessed 02 February, 2018.
- Baume, D. 'Bloom and course design – disaster strikes!' (created 06 October, 2015) <https://davidbaume.com/2015/10/06/bloom-and-course-design-disaster-strikes/> accessed 02 February, 2018.

Original, early and/or major source:

Bloom, B., D. Krathwohl, and B. Masia *Taxonomy of educational objectives*. (New York: David McKay, 1974).

Useful summary/introduction:

Clark, D.R. 'Bloom's taxonomy of learning domains' The performance juxtaposition site (updated 12 January 2015) <http://www.nwlink.com/~donclark/hrd/bloom.html> accessed 02 February 2018.

Biggs' SOLO taxonomy

Rather than looking at the nature of the intellectual task, as Bloom does, Biggs looks at two dimensions of a task: the complexity of it, in terms of the number of different elements in play, and then the number and complexity of the interrelationships between these different elements. It is thus capable of being applied to any subject matter.

SOLO is a valuable tool for analysing assessment tasks and learning activities – one would expect both the number of elements in a task and the number and complexity of the relationships between these elements to increase as we move up the academic scale. SOLO can be used together with Bloom to good effect, although with the caveats about Bloom expressed above.

Original, early and/or major source:

Biggs, J.B. and K.F. Collis *Evaluating the quality of learning: the SOLO taxonomy*. (Saint Louis: Elsevier Science, 2014).

Useful summaries/introductions:

Biggs, J.B. 'SOLO taxonomy' <http://www.johnbiggs.com.au/academic/solo-taxonomy/> accessed 02 February 2018.

Clark, D.R. 'Alternative to Bloom: structure of observed learning outcome (SOLO) taxonomy' The performance juxtaposition site (updated 12 January 1999)

http://www.nwlink.com/~donclark/hrd/Bloom/SOLO_taxonomy.html accessed 02 February 2018.

Thorndike's law of effect

'... responses that produce a satisfying effect in a particular situation become more likely to occur again in that situation, and responses that produce a discomforting effect become less likely to occur again in that situation.' Thorndike (1898)

The original research was done on cats, but it seems to hold well for people, too.

The main 'satisfying effect' of something done by a student may initially be a positive response from a teacher or peer. The more we can help a student to judge, and thereby take appropriate satisfaction in, their own work, the more the student becomes self-reliant, and the better able to generate their own 'satisfying effects'.

Original, Early and / or Major Source:

Thorndike, E. 'Animal intelligence: an experimental study of the associative processes in animals', *Psychological Review*, 5(5) 1898, pp.551–53.

Useful summary/introduction:

McLeod, S.A. 'Edward Thorndike', [simplypsychology.org](http://www.simplypsychology.org) (2007)

<https://www.simplypsychology.org/edward-thorndike.html> accessed 02 February 2018.

Perry's stages of intellectual and ethical development

Perry studied how students' understanding of knowledge and learning change as they progress through (US) college. The original version has nine levels, which fall into three main stages, each with subsections.

The first of the three stages I characterised by an unquestioned view of truth as 'absolute truth', a worldview in which things are unproblematically either true or not true.

In the next stage, we see an increased level of complexity, which Perry describes as 'multiplicity – the confrontation and coping with diversity and 'multiples' in virtually everything.'

Finally, we see commitment, and the need to take a position, nonetheless aware of possible limitations of the position.

Original, early and/or major source:

Perry, W.G. *Forms of intellectual and ethical development in the college years*. (San Francisco, California: Jossey-Bass Publishers, 1999).

Useful summary/introduction:

'William Perry's theory of intellectual and ethical development' Student development theory <http://studentdevelopmenttheory.weebly.com/perry.html> accessed 02 February 2018.

'Intellectual and ethical development in the college years' University of Oxford: institute for the advancement of university learning (created 05 October 2001) https://www.learning.ox.ac.uk/media/global/wwwadminoxacuk/localsites/oxfordlearninginstitute/documents/supportresources/lecturersteachingstaff/resources/resources/Perry_Intellectual_etc.pdf accessed 02 February 2018.

Rogers' student-centred learning

As you read the five items below, you will see Rogers' background as a person-centred psychologist and therapist. I hope you will also see powerful ideas about education, especially perhaps items one, two and five. Items three and four link interestingly to Piaget, suggesting that assimilation (of new ideas into one's current worldview) is much easier than changing one's current worldview in order to accommodate new ideas or information. As a consequence, accommodation is only likely to occur when we feel safe – a useful thing for teachers and learners to remember.

1. A person cannot teach another person directly; a person can only facilitate another's learning.
2. A person learns significantly only those things that are perceived as being involved in the maintenance of or enhancement of the structure of self.
3. Experience which, if assimilated, would involve a change in the organisation of self, tends to be resisted.
4. The structure and organisation of self appears to become more rigid under threats and to relax its boundaries when completely free from threat.
5. The educational situation which most effectively promotes significant learning is one in which (a) threat to the self of the learner is reduced to a minimum and (b) differentiated perception of the field is facilitated.

Original, early and / or major source:

Rogers, C.R. *Freedom to learn for the 80's*. (New York: Merrill, 1994) 3rd edition.

Useful summary/introduction:

Weibell, C. 'Freedom to Learn (Rogers – 1969)', Principles of learning (created 2011) <https://principlesoflearning.wordpress.com/dissertation/chapter-3-literature-review-2/the-human-perspective/freedom-to-learn-rogers-1969> accessed 27 April 2017.

Bligh – what's the use of lectures?

Student attention in a lecture peaks after just five minutes, and falls steadily thereafter. Short breaks, preferably with relevant activities, can revive attention (Bligh, 2000 pp.52–53). 'Use lectures to teach information. Do not rely on them to promote thought, change attitudes, or develop behavioural skills, if you can help it (Bligh, 2000 p.20).

It is legitimate to ask how much time we should be spending, in higher education, teaching information, rather than, for example, promoting thought.

Also, Bligh's work, here published in 2000, cannot be up-to-date with recent developments in the applications of technology to teaching, learning and indeed academic and professional activity more widely.

Original, early and/or major source:

Bligh, D. *What's the use of lectures?* (San Francisco: Jossey Bass, 2000).

Useful summary/introduction:

Kidd, D. 'Book review: What's the use of lectures?' Center for teaching excellence (created spring 2002) <http://cte.virginia.edu/resources/book-review-whats-the-use-of-lectures/> accessed 02 February 2018.

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