So what is Learning?

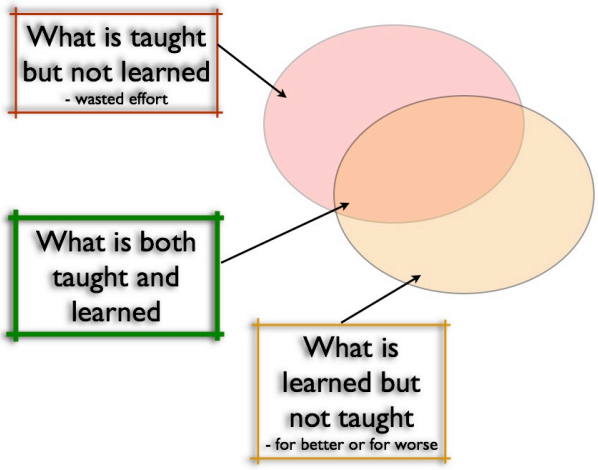
A fairly standard consensual definition is "a relatively permanent change in behavior (sic.; it's American of course) that results from practice." (Atkinson et al 1993). This is of course arguable, particularly the "practice" criterion. We are indeed becoming more confused: evidence from genetics, evolutionary psychology and neuroscience is arguing ever more strongly for predispositions for our behaviour. Hume's tabula rasa is getting dirtier by the minute: this is one of those areas for which Mark Twain's (attributed) comment might have been coined:

"Many researchers have already cast much darkness upon this subject, and it is probable that if they continue, that we shall soon know nothing at all about it"

Even if psychologists ever agree about what learning is, in practice educationalists won't, because education introduces prescriptive notions about specifying what ought to be learnt, and there is considerable dispute about whether this ought only to be what the teacher wants the learner to learn (implicit in behavioural models), or what the learner wants to learn (as in humanistic models).

What is Taught and what is Learned

It is a simple point that what is taught is not the same as what the students learn, but it does have a number of implications.



In the figure, it is clear that some of what we teach is wasted effort: but the diagram is a representation of only one learner's learning. It may be that within a class as a whole, everything we teach is learned, by someone. The shape representing the teaching is smaller than that for learning, because students are also learning from other sources, including colleagues and the sheer experience of being in the educational system, as well as more conventional other resources such as books.

It is an open question in any given case as to whether what they learn apart from what they are taught is a "good" thing or not. It includes the "hidden curriculum", which is a phrase used by Snyder (1971) to describe what students learn by default in educational settings. His original observations at MIT in the late 'fifties were about how students with an over-loaded curriculum acquired survival tactics to get through their courses, such as mugging up only the parts which were likely to come up in the exams, and thus losing the point of much of the teaching. This selective learning is one of the characteristics of what is now called "surface learning", although that tends to be seen as an attribute of the learner - Snyder saw it as a problem of the institution.

From a sociological (Marxist) rather than primarily educational perspective, Bowles and Gintis (1976) suggested that all US schooling has a hidden curriculum dictated by the demands of a capitalist economy. More recently, critical theorists have sought to expose the hidden assumptions behind curricula (see, for example, Collins (1991) - see also Cultural Considerations). Some of the work seems marginal and academically political, but there is no denying that teachers' strategies, such as labeling, can have a profound effect on a student's experience. Claxton (1996) has convincingly argued that adult learning is profoundly influenced by "implicit theories of learning" acquired at school, and that teachers tend to reproduce their implicit models in the ways in which they themselves go on to teach.

Reasons why people learn the "wrong" things, and why they stick:

- Authority and learning
- Anticipatory-avoidance learning
- Learned helplessness
- Resistance to learning

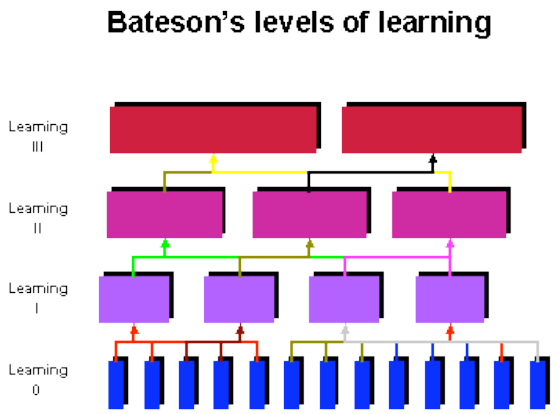
ATHERTON J S (2005) Learning and Teaching: What is learning? http://www.learningandteaching.info/learning/whatlearn.htm

Learning how to Learn

For our purposes, there are two main traditions about learning how to learn. One stems from the Deep and Surface learning strategies studies, and the other from the work of Gregory Bateson.

Bateson maintained that many discussions about learning were confused by category errors about the kind of learning they were about. He suggested that there are a number of levels, in which each superior level is the class of its subordinates (rather like Kelly's notion of superordinate and subordinate constructs).

Bateson's levels of learning



Bateson himself uses the analogy of movement:

- **Learning 0** is direct experience: I put my hand in the fire - it gets burned

Learning 0 is like the position of an object

- **Learning I** is what we routinely refer to as learning: the generalisation from basic experiences. I have experienced "hand in fire" and "being burned", and I won't do it again. This is straightforward and compatible even with behavioural views, as well as the cycle of experiential learning.

Learning I is its speed when it moves

- **Learning II** (which he sometimes called "Deutero-Learning") contextualises Learning I experiences. It is about developing strategies for maximising Learning I through the extraction of implicit rules, and also putting specific bits of Learning I in context: I don't generally risk getting burned, but I might do so to save someone else from a fire.

Learning II is acceleration (or deceleration) - a change in speed

- **Learning III** contextualises Learning II, and is not understood, but it may be the existential (or spiritual) level: What does it say about me that I would risk getting burned in order to ...?

Learning III is a change in the rate of acceleration - a change in the change of the change of position ...

The higher the level, the less we understand about the process, and although such higher level learning undoubtedly takes place, the more difficult it is deliberately to manage it.

Note that levels of learning are different from levels of understanding, as exemplified in Bloom's taxonomy of educational objectives, and also to be distinguished from the similar terminology of Gagne.

This account does not do justice to Bateson's very complex thinking, which starts from posing the question why people get better with practice at doing fairly meaningless tasks such as remembering nonsense syllables.

The interesting question for academic practice is the qualitative shift: required to move from Learning 1 to Learning II, which some people find more difficult than others, perhaps in specific subject areas. How do we help them to achieve it? This may be the biggest remaining problem in pedagogic/andragogic practice.

Some clues are contained in reflection, in problem-based learning and action learning, situated learning, and even in intelligence, but we still don't know reliable answers.

ATHERTON J S (2005) Learning and Teaching: Learning how to learn [On-line] UK: Available: http://www.learningandteaching.info/learning/learnlea.htm Accessed: 11 June 2008

Resistance to Learning

Behaviourists seem to believe that people learn only when it's worth their while. Humanists seem to believe everyone wants to learn. But learning is a form of personal change, and that can be resisted as often as it is embraced.

Generally speaking, when people fail to learn something which they have been taught, the failure is attributed to one or more of three factors:

- lack of motivation
- lack of ability or aptitude
- poor teaching.

Experience, however, suggests a fourth factor which is often neglected:

- the cost of learning.

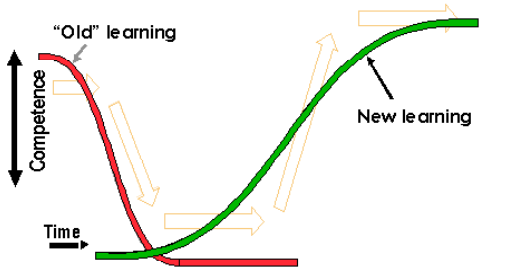
The economic cost of undertaking higher education is a real factor for many students in much of the UK at the moment, but "cost" is here used psychologically. It implies the loss involved for the (superficially) competent and experienced adult in "changing their ways". This change may be termed "supplantive learning", to be contrasted with simple "additive learning" in that instead of just adding new knowlege or skills to an existing repertoire, supplantive learning calls into question previous ways of acting or prior knowledge and replaces them (Atherton, 1999).

Supplantive learning is difficult enough when it is entirely under the learner's control, but when it is required, demanded or forced, or creeps up out of awareness, or there is significant emotional investment in previous beliefs or ways of acting, it becomes problematic.

Simple, unproblematic supplantive learning entails a drop in morale which comes from temporarily diminished competence in the skill or understanding. Problematic supplantive learning overlays this with an experience analogous to crisis.

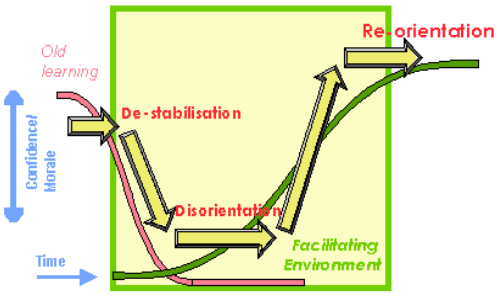
The natural course of such learning follows three stages:

- **De-stabilisation:** in which the previous way of thinking or acting is upset
- **Disorientation:** the "trough" in which loss of competence and morale combine to make the learning difficult, and there is a considerable temptation to return to the "old way".
- **Re-orientation:** the gradual climb out of the trough, which follows a similar pattern to the curve of "normal" additive learning.



The replacement (supplanting) of former learning leads to a temporary "trough" of diminished competence

The Learning Trough in problematic supplantive learning



It can be precipitated in three ways:

- By **external crisis**, which forces the change
- By "**hitting bottom**", in which there is no way but up, from the bottom of the trough (as in the recovery programme of Alcoholics Anonymous)
- By a "**facilitating environment**", which provides a safe opportunity to change, but does not force it.

Clearly, only the third is acceptable in educational terms.

Note: There is another quite different usage of the phrase "supplantive learning" particularly in US literature on the curriculum. There it is used to refer to teacher-centred or "reception", rather than "discovery" or learner-centred stategies, which are known as "generative" learning. (Sorry, no very informative links available)

ATHERTON J S (2005) Learning and Teaching: Resistance to Learning [On-line] UK: Available: http://www.learningandteaching.info/learning/resistan.htm Accessed: 11 June 2008