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# *Learning theories*

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# 2 Learning theories

**By the end of this chapter you should have:**

- considered **why** learning is at the heart of good teaching;
- enhanced your understanding of constructivist learning theories;
- analysed **how** learning theory can enhance your classroom practice and pupils' performance.

**Linking your learning**
Kinchin, G (2004) 'Learning and learning styles', in Ellis, V (ed) *Achieving QTS: Learning and teaching in secondary schools*, second edition. Exeter: Learning Matters.

**Professional Standards for QTS**
3.3.1, 3.3.3

## Introduction

Learning should be fundamental to the practice of teachers. If not then attention is focused away from the key objective of teachers' work. The result of this is lessons that are full of activities that do not actually enable learning to happen. An understanding of learning theories and the related knowledge about the ways that your pupils are motivated should have a strong impact on your planning, approaches to teaching and learning, and the ways you monitor, assess and give feedback.

There are many theories regarding why and how children learn – you will probably develop your own. These ideas may or may not be linked to a particular theory and you will probably find that no single theory fits your understanding and experience of learning. Your ideas about learning should be fundamental to your practice and be underpinned by your values, as discussed in Chapter 1.

Many texts explore the behaviourist and the cognitive groups of theories. Behaviourist theories, most famously explored by B F Skinner (1968), suggest that learning occurs as a consequence of a stimulus. Behaviourist theories state that pupils learn when they respond to some stimuli engineered by the teacher. Learning is then reinforced by feedback from the teacher so that pupils are conditioned by this response. Thus a teacher who gives feedback about why a piece of work is good will develop the learner to replicate this in the future. These behaviourist approaches can encourage many behaviour management approaches in school (e.g. Rogers, 2004).

Constructivist theories, of which Vygotsky (1962, 1978, 1986) and Bruner (1966, 1983) are two of the most famous proponents, relate to the perceptions and previous learning of pupils and how this influences their future learning. Pupils learn differently depending on their current knowledge. Future learning will be influenced by this but

also this current knowledge will be reformed and developed as a consequence of this new experience. Constructivist learning cannot be passive as pupils are reforming their thinking constantly. This suggests that often constructivist learning comes from socialisation (either in the classroom, playground or the wider world). The following extracts will consider why these theories are important, review the various ideas of constructivist theory and then apply this through meta-learning to the classroom context.

## Why?

Before you read the extract, read:

Claxton, G (1990) 'Implicit theories' (Chapter 2), in *Teaching to learn*. London: Cassell.

**Extract: Claxton, G (1990) *Teaching to Learn*. London: Cassell.**

**The trailer**

Let me now give a preview of the other main themes that the book is going to explicate, and to argue for. The first is the idea that our implicit theories do not constitute one vast, coherent body of knowledge, like the theory of relativity: rather they are a collection of lots of different, piecemeal, purpose-built 'minitheories' which we have accumulated for doing the range of jobs and solving the range of problems that we have encountered to date. Our factual knowledge and our 'know-how' are bundled up together in these packages, as instruction booklets, plans and sets of tools may be kept together on different benches in a workshop that are customarily used for particular kinds of job. Cognition consists of capsules of capability, each one dedicated to coping with events that arise within a familiar domain of experience. Thus functional distinctions between knowledge or 'content' on the one hand, and processes (or the tautologous 'process skills', a term which is fashionable in some quarters at the moment) on the other, are invalid. And this wreaks havoc with any attempt to teach general-purpose 'problem-solving skills'. Even the 'learning strategies', which I shall introduce in a moment, are not always readily available, but are tied to particular kinds of learning experience and appear only when their special 'prompt' is present.

... we are also forced to reappraise commonsense notions, based again on discredited psychology, of 'ability' and 'intelligence'. The mind does contain a natural learning ability which enables these minitheories to be tuned and developed in the light of experience. But this is only the beginning. As we grow up we are able to acquire extra abilities which come to function as 'learning amplifiers' or 'learning strategies'. With the aid of these we are able to accelerate our learning and to make it very much more safe and economical. So 'ability' or 'intelligence', far from being some innate, monolithic general-purpose quality given out in differing amounts, is in large measures an amalgam of these learning strategies.'

This opens up another set of issues, for it must be the case that different learning strategies applied to the same situation will produce different kinds of learning product – an expanded capability, an insight, a recorded fact, a personal memory. Not all of these mental contents arise automatically; it is commonplace that each can occur without the others. So combinations of past and present experiences will lead to different events and repercussions in the learners' minds, depending on the learning 'set' that they happen to create, or that is already in place.

What you do as a teacher will influence (but it cannot determine) the way your pupils decide to learn in your lessons, and the sort of learning that therefore results. And the selection may be a good or a bad one. They may find out, in a tricky exam, for example, that they need some flexible skills when all they have are memorized facts. Or, to look beyond the classroom, people may find that, when trying to solve problems in relationships, they may have plenty of cleverness but not much insight. We shall see that this view of learning strategies has important implications for the conduct of schooling.

The next link in the chain is to ask where these strategies come from. The answer is that they are very definitely learnable – their repertoire is expandable – but equally definitely not trainable. The fact that they can be identified does not mean that they can be deliberately acquired through specialized practice. This is because an essential aspect of intelligence is knowing intuitively the power and limitations of each of the strategies – having a good feel for their appropriateness for different contexts and purposes – and *this sense can be developed only in situations where learners experience real choice and uncertainty.* Like all arts, learning relies on the subtle appreciation of events that arises gradually and spontaneously out of the prolonged exercise of responsibility – responsibility which may well be guided and constrained, but which cannot be reduced too far if the art is to develop.

This growth can therefore be supported but not engineered. It is possible to create environments in which this 'learning tool-kit' is reliably developed. However, contrary to wishful thinking, this goal of 'learning to learn' *cannot* be achieved with methods that are also trying to achieve some of the more conventional educational aims at the same time. This is an unpalatable psychological reality that it does no good to ignore, and that once faced, opens up the interesting question of at what ages different goals may be most appropriate, and/or how the separate strands can be interwoven. We will only be able to invent more powerful forms of schooling, I believe, when we have given up the naïve educational rhetoric which argues for a multiplicity of stools, only to persist in falling between them all.

The fact that learning is not of one but of many kinds opens up the question of how learners make the intuitive decision of how to learn. Clearly their choice is constrained by the nature of the learning experience and of the kind of 'steer' that is given to them, intentionally or unintentionally, by the way the learning environment is set up. But it will also be a reflection of their learning *habits*; of their current learning and other needs or interests at the moment; and also of the threats, real and apparent, that they perceive to be present. Thus the stance which young people adopt with respect to their learning reflects not only the opportunities to learn that are present, but the whole range of priorities that they bring with them. Attitudes to friendship, to success and failure, to authority as well as to themselves, all have an influence on the tacit decisions that are made about learning.

If this general analysis of learning is to be valid, it must illuminate the stances that young people adopt within the context of schools as they are at the moment, as well as showing the different attitudes that might be elicited by other contexts, both existing and hypothetical. For example, one particular inference is that, to learn in a way that is both judicious and courageous, a person has to assess the pros and cons of learning (and not learning) accurately. But the acquisition of an identity that is overly sensitive to failure and criticism stops the right decisions being made about what, when, where, why and how to learn. I shall argue that the ethos of school, again despite the rhetoric and even the widespread good intentions, works to produce such an identity in many pupils; and that, when this has happened, it becomes a matter of good sense for them to subordinate their wish to learn, and to learn how to learn, to the need to manage a increasingly stressful social situation.

## Analysis

In his introduction to *Teaching to learn* Guy Claxton makes a clear call for social constructivist learning approaches. The extract strongly encourages teachers' understanding of learning theories and the development of mini-theories about learning. If you are not aware of the ways that children will learn it is difficult to develop into a competent teacher.

Claxton (1990) likens the idea of mini-theories to an island. We are comfortable with ideas that sit in the confines of the existing island but as soon as a new idea is perceived to be in the surrounding water it creates complexity – we don't know how to react to it. The ideas that are in the shallow water around the island are reachable and in reaching out for them we develop our knowledge beyond the confines of land. When ideas are a little further away we might need to consider new strategies to reach them (swimming or using a boat). If the ideas are far out to sea, we will either not even see them or not consider them worth finding.

Claxton explores his mini-theory idea to unpack its constituents. A mini-theory is formed of two parts – the 'head and tale'. The 'head' indicates what the theory is for and the 'tale' is where the knowledge is contained. The following list illustrates each component. Each pupil will develop their own set of mini-theories about their knowledge and their learning.

H Hub – what the theory is about or for
E Environment – the social, emotional, physical and physiological context
A Aim – the goals, interests, etc. of the theory
D Display – the action produced by the theory

T Tendencies – the habits/impulses that indicate the way we deal with something
A Appearances – how we perceive the theory
L Language – the way we choose to communicate
E Empowerment – ways to develop the theory, e.g. through learning strategies

The influence of the teacher's approach to a lesson will have a big impact on the potential of the learning in it. How the teacher chooses to approach the development of new knowledge or skills, the context it is delivered in and the relevance to the pupils will all be factors in the success of the lesson. These HEAD factors will influence how pupils approach the learning and how they respond in their actions and language (the TALE factors).

### Personal response

Think back to one or two key learning points in your own education (e.g. a piece of fieldwork at school or an undergraduate tutorial). What conditions were set up (by the teacher or the learning environment) to help you learn? What can an understanding of learning theories tell you about how the teacher approached your learning?

### Practical implications and activities

Discuss with your mentor (or other colleagues) the ways in which pupils learn in your subject. Consider how this is a factor of the learning environment, the approaches to teaching or the way pupils consider the subject.

## What?

Before you read the extract, read:

Boud, D, Cohen, R and Walker, D (1993) 'Introduction: understanding learning from experience', in Boud, D, Cohen, R and Walker, D (eds) *Using experience for learning*. Buckingham: Open University Press.

**Extract: MacGilchrist, B, Myers, K and Reed, J (1997) *The intelligent school*. London: Paul Chapman Publishing.**

**Learning as a process**

***Theories about how we learn***

All areas of knowledge invent their own language which can be offputting and excluding for outsiders but useful for conveying new ideas precisely. 'Jargon' commonly used by those who study the theory of learning includes terms such as *calibration, scaffolding, zone of proximal development (ZPD), metacognition* and *accelerated learning.* In the next section we explore some of the research behind these terms because we believe it has relevance for practitioners.

There are many theories about learning. If we were to polarise them, on one extreme of the continuum is *the 'traditional' model which views learning as the reception of knowledge, the learner as passive and the appropriate learning style as formal.* The learner is seen as the 'empty vessel' and the teacher as the one responsible for filling this vessel. The passive learner responds to stimuli provided by the teacher. Learning is seen as *linear and sequential.* Little account is taken of what the learner may bring to the experience in the way of existing knowledge, existing language, self-esteem, previous experience of learning and preferred learning styles. On the other end of this continuum *is the 'progressive' model which sees learning as discovery, the learner as active and the learning style as informal.* The learner is fresh and innocent with time to experiment and has the desire and capacity to learn, perhaps with some judicious facilitation pointing her or him in the right direction.

Of course, this caricature is unfair to both theories, and begs many questions, in particular, what it is that is being learnt and how important this is. For example, a different model may be appropriate when learning keyboard skills from that appropriate for learning Keynesian economics.

*A widely held and current view is that learners learn through a process of first being exposed to new knowledge, and then attempting to make sense of the new knowledge in terms of their existing knowledge.* Learners do this with other things (books, computers) and with other people (each other, their teacher). Learning thus can have an important interactive social component.

Cooper and McIntyre (1996) explain this process of making sense of new knowledge, known as *calibration,* in which the learner has an active role to play. Calibration involves

the learner using the teacher's explanation to make her own sense of it and internalising the information in a way that is meaningful to her. The teacher's role in this transaction is to create circumstances for this to happen and, indeed, to make the learner want to participate in this process. To do this, the teacher has to diagnose and understand what stage the learner is at and provide the appropriate frame of reference or structure for her to move on. This process is sometimes described as *scaffolding*.

> *The teacher provides model structures that enable the pupil to apply existing skills in new ways in the appropriation of new knowledge ... The important point here, however, is that for scaffolding to be effective, the structure that is supplied by the teacher must be selected on the basis of its goodness of fit with the pupil's existing knowledge and cognitive structures.*
>
> (Cooper and McIntyre, 1996, p97)

This is a challenge for teachers. If the new knowledge is too far removed from the learner's current understanding then it is likely that the learner will 'switch off' because she is unable to make sense of it. Piaget (1932) argues that the extent to which a learner can assimilate and accommodate new knowledge is dependent upon the stage of development the learner has reached. For Piaget the teacher has to be aware of the stage of development the learner is at in order to facilitate the learner reaching the next stage.

Vygotsky (1987) believes that learning and development are an inextricable part of the same process. The two concepts are not mutually exclusive. The teacher does not have to wait for the right developmental stage to be reached, but has to provide the 'scaffold' for the learning to occur. Vygotsky suggests that there is *a zone of proximal development* (ZPD). This zone is the gap that exists between performance without assistance and performance with assistance. In this model the teacher has a proactive role and has to make the correct analysis of where the pupil is and then provide the appropriate scaffolding. The capacity to learn through instruction and therefore direct teaching is central to these concepts.

Vygotsky's theory of learning finds much support from studies of the functioning of the brain. While we are still not certain how our brains work Abbott (1994) argues that:

> *One major discovery, which has revolutionised the way we think about the brain and how it learns, has been the fact that we know that it has plasticity, which means that the physical structure of the brain actually changes as a result of experience. The brain will change if stimulated through interaction with the environment.*
>
> (p63)

> *The brain learns when it is trying to make sense; when it is building on what it already knows, when it recognises the significance of what it is doing; when it is working in complex, multiple perspectives.*
>
> (p73)

Schools can consciously provide opportunities through curriculum content, teaching styles and the physical and social environment for this stimulation to take place in a challenging but non- threatening way. Providing challenging but non-threatening

situations for learners is not easy for schools. For example implementing the national curriculum in a way that recognises and builds on pupils' prior knowledge and skills. If the challenge turns into something the learner perceives as too great and non-attainable the learner is likely to 'drop out'. The optimal state for learning is described by Smith (1996, p13) as one of 'relaxed alertness – high challenge and low stress'. The learner will be more likely to meet the challenge if she is able to make connections with previous knowledge. Therein lies the skill of the teacher ... and his or her ability to make appropriate assessments, and consequently connections, for the learner.

According to Gipps and Murphy (1994, p24) learners need to feel a sense of ownership over what they are learning. They need to feel that what they are being taught is relevant to their own purposes. This process has been described as *metacognition*:

> *Metacognition is a general term which refers to a second-order form of thinking: thinking about thinking ... It is a process of being aware of and in control of one's own knowledge and thinking and therefore learning ... An essential aspect of metacognition is that learners control their own learning and, in order to reflect on the meaning of what they are learning, pupils must feel commitment to it.*

There is an interaction therefore between learning, thinking and teaching. The teacher may know what she wants to teach but the learner has control over what is learnt. The teacher may provide the appropriate scaffolding but the learner has to be prepared to use it and motivation to learn is an essential part of the pact between the teacher and learner that we referred to earlier. Teaching the learner the skills of metacognition is likely to be an important motivating factor. This notion finds support in the literature about multiple intelligences. Therefore, as well as being knowledgeable about learning theories, teachers also need to understand the nature of intelligence and that people learn in different ways for different purposes.

## Analysis

We have seen so far that learning theories (as exemplified by Claxton) are a vital element in the knowledge that teachers need in order to be successful. The last extract gives a more general view of constructivist theories of learning.

Boud, Cohen and Walker (1993, pp8–16) cite five propositions in their analysis of learning from experience:

1. Experience is the foundation of, and the stimulus for, learning.
2. Learners actively construct their experiences.
3. Learning is a holistic process.
4. Learning is socially and culturally constructed.
5. Learning is influenced by the socio-emotional context in which it occurs.

Thus to view a learning experience in isolation is simplistic; it is a function of many variables, not least the impact on the development of these five factors by the teacher.

The important reflective element of learning has not been overlooked by initial teacher education. Schön (1983) developed the term *reflective practitioner,* defined by Brindley (2002, p145) as:

> The ability to articulate good practice, to explain beyond the anecdotal level why strategies work in the classroom – in short to construct a conceptual framework that allows you to transfer the knowledge from one teaching situation to another and to know why you're choosing to do so.

The term has been criticised by some as being *technicist* and Arthur *et al* prefer the term *reflective professional* which gives *weight to values which surround, inform and are informed by reflection* (Arthur *et al*, 2005). It is important to be critical when being reflective and relate these criticisms to your professional values and practice.

Critical reflection is required to complete lesson evaluations and in the compilation of learning journals. Moon identifies the following benefits of journal reflections:

- Journal writing produces good conditions for learning.
- It demands that the learner stops and thinks.
- It helps focus thoughts.
- It encourages learners to acknowledge their progress.
- The process of writing down your thoughts can help clarify them even if it merely identifies questions.
- Writing can be used to articulate thinking and also to build knowledge.
- It allows learners to record their thinking at a particular time and revisit it.

(Moon, 1999, pp19–20)

As well as understanding *how* pupils learn, teachers also need to consider *why* they learn. The learning opportunities that you provide should not be in Claxton's 'deep water' suggested in the previous extract. It requires careful *scaffolding* and thought to ensure it is within the *zone of proximal development.*

It is also important that you are aware of motivational theories that link to learning. Theories of motivation are a key factor in helping understand why pupils are willing (or not) to learn. Motivation can be grouped into intrinsic and extrinsic factors. Extrinsic factors are easier to discern; they can be easily grouped into the rewards and sanctions from doing a task. Intrinsic factors are harder to identify as the *rewards are inherent to the activity.* The behaviours of intrinsic motivation are associated with *interest, enjoyment and satisfaction* (Sansone and Harackiewicz, 2000, pxvii). Extrinsic motivation and intrinsic motivation do not always sit comfortably together and there is a danger that extrinsic factors can inhibit intrinsic motivation over a longer term.

Probably the most famous motivational theory was developed by Abraham Maslow (1953). He suggested a five-point hierarchy of needs beginning with basic physiological needs and culminating in self-actualisation, as explained below.

1. Physiological needs – basic requirements of hunger, thirst and warmth catered for.
2. Physical and psychological safety – a non-threatening environment.
3. Affiliation and affection – need for belonging/inclusion.
4. Self-esteem – need to be recognised as a competent learner.
5. Self-actualisation – able to meet own potential.

Maslow suggests that the basic needs should be in place before there is any chance of the higher order element being reached.

Rogers (1982) developed a theory of motivation around expectation. This suggests that it is the expectations of the teacher that affect how pupils approach their learning and the way pupils perform. A behaviourist approach to learning would complement this theory.

Weiner's attribution theory (Weiner, 1972) links the motivation of the learner to the previous experiences of learning (positive or negative), the amount of effort that has been extended to the task and the learner's understanding of the relationship between what has been accomplished and the success or failure of the task. Attribution theory has strong links to constructivist models of learning as it is based upon the individual's construct of learning and motivation through the influence of previous learning experiences.

## Personal response

What motivates you to learn? How does this differ depending on time, place or teacher?

## Practical implications and activities

Observe a lesson in your placement school. Try to concentrate on the learning in the lesson (rather than the direct outcome of the activities). It might be easier to observe a small group of pupils in order to really focus upon what the pupils are experiencing and doing. How do the pupils learn? Does this process seem to differ for different pupils and/or at different points in the lesson?

Discuss with your mentor (or other colleagues) how they motivate their pupils to aid learning.

Consider the responses to the last two activities in the light of the constructivist ideas you have read about in the previous extracts. In what ways do teachers aid the pupils' learning by:

- linking to previous experiences;
- providing a physically and physiologically safe environment;
- *scaffolding* the learning;
- providing tasks that provide a possible learning experience in the *zone of proximal development;*
- enabling pupils to raise their self-esteem and moving pupils to approach 'self-actualisation'?

## How?

Before you read the extract read:

Claxton, G (1990) 'Learning strategies' (Chapter 6) in *Teaching to learn.* Cassell: London.

**Extract: Watkins, C *et al* (2001) 'Learning about learning enhances performance'. *NSIN Research Matters*, No. 13, pp1–7.**

**Background/Context**

In the last few decades, understandings of learning have advanced significantly. In the 1960s and 1970s it was fashionable to model learning on computing processes, and to consider learners as 'intelligent systems'. Since then other features of learning have been re-discovered. Studies of social aspects of learning have re-emphasised that understanding is a shared phenomenon, that learning can be usefully viewed as joining a knowledge community, and that much learning remains very specific to the social situation in which it was originally learned.

In parallel and sometimes in connection with these developments, increasing attention has been given to 'higher order' processes of understanding. The term 'metacognition' has become more commonly used, following its coining in 1976.

In the world of education, practices reflecting these ideas have been taken up in various ways. The following terms can be found in regular use by educators:

- Thinking about Thinking
- Learning to Think
- Learning to Study
- Learning How to Learn
- Learning to Learn
- Learning about Learning

The term metacognition (awareness of thinking processes, and 'executive control' of such processes) denotes the first in the list, whereas the term meta-learning (making sense of one's experience of learning) denotes the last. Meta-learning covers a much wider range of issues than metacognition, including goals, feelings, social relations and context of learning. The meanings of the terms in this list and the practices associated with them vary in important ways: some adopt a highly instrumental approach to learning while others do not: some imply that successful learning strategies may be defined in advance, while others do not.

Notwithstanding the differences between these terms, their broad focus is of great importance for learning. Indeed, an earlier review in this series, '*Effective Learning*', highlighted such higher-order processes as a key ingredient in the definition of effective learning. 'Effective leamers have gained understanding of the processes necessary to

become effective learners', and effective learning 'is that which actively involves the student in metacognitive processes of planning, monitoring and reflecting' Writers who use the term 'expert learner' accentuate this point:

> *Reflection on the process of learning is believed to be an essential ingredient in the development of expert learners. By employing reflective thinking skills to evaluate the results of one's own learning efforts, awareness of effective learning strategies can be increased and ways to use these strategies in other learning situations can be understood.*

While the range of understandings of learning in the formal literature has developed, the range of understandings of learning held by learners themselves is also now a key focus. People variously view learning as:

- increasing one's knowledge
- memorising and reproducing
- applying general rules to particulars
- understanding, making sense
- seeing something in a different way
- changing as a person

and the links between conception of learning and how a learner goes about their learning are now clearer. The above conceptions have been described in polarised ways – quantitative versus qualitative, or surface versus deep. Such descriptions risk confusing a conception of learning with approach, strategies or outcomes. To appreciate them as descriptions rather than acts or outcomes, we prefer to view them as varying from *thin* conceptions to *rich* conceptions of learning.

Similarly, conceptions of teaching are identifiable. Bruner writes of four, which simplified are:

- showing
- telling
- making meaning
- creating knowledge

While teaching is not the core focus of this paper, it is mentioned here because approaches to teaching influence approaches to learning.

**Learning, and its relationship with performance**

We first consider the relationship between learning and performance with the learner as the focus. Three decades of major studies in a number of countries have shown that different learners approach achievement-related tasks with different goals, orientations or motivations, and that the distinction between learning and performance is a key. It relates to different beliefs about success, motivations in learning, and responses to difficult tasks.

| *'Learning orientation'*<br>concern for *improving* one's competence | *'Performance orientation'*<br>concern for *proving* one's competence |
|---|---|
| • belief that effort leads to success | • belief that ability leads to success |
| • belief in one's ability to improve and learn | • concern to be judged as able, concern to perform |
| • preference for challenging tasks | • satisfaction from doing better than others |
| • derives satisfaction from personal success at difficult tasks | • emphasis on normative standards, competition and public evaluation |
| • uses self-instructions when engaged in task | • helplessness: evaluate self negatively when task is difficult |

So learners with a learning orientation do not focus on performance as a goal – a paradox in some people's minds. Their success is partly achieved by talking themselves through the task in hand. By contrast, performance orientation is associated with helplessness – 'I'm no good at Maths' and the like. This difference may relate to the finding that giving learners feedback of a person-orientated kind leads to lower levels of performance than giving task-related comments. Similarly, giving grades as feedback can undermine motivation: pre-occupation with grade attainment can lower the quality of performance. Indeed, performance feedback can have a negative effect on performance on about 40% of occasions. But schools are subject to increasing pressure for 'results', and performance is confused with learning.

**Learning orientation, rich strategies and meta-learning**

Learners who adopt a learning orientation may also be those who have a richer conception of learning, which engages more elements and more complex relationships. At the same time, they may have a richer range of learning strategies, but here a further connection emerges. Learners may 'possess' learning strategies, but not employ them, or employ them ineffectively. So it is the process of selection and use which comes to the fore. This is where the metacognitive strategies of monitoring and reviewing are vital: indeed one review concluded that direct teaching of 'study skills' to students without attention to reflective, metacognitive development may well be pointless. Since the development we seek refers to learning (i.e. more than just thinking) we consider the term meta-learning more accurate.

So learning about learning aims to:

1. focus on learning as opposed to performance
2. promote a rich conception of learning, and a rich range of strategies
3. develop meta-learning to monitor and review

In what ways can classrooms foster this? Is there any evidence that such learning leads to high levels of performance, and if so under what conditions? The choice of performance measures and whether they assess high-level learning will be critical.

**Explanations of meta-learning and its impact**

We may think of meta-learning as an additional cycle in the learning process, through which metacognitive knowledge about learning is constructed just like any other knowledge, pieced together on the basis of fragmentary data from a range of experiences.

Meta-learning can bring attention to goals, strategies, effects, feelings and context of learning, each of which has significant personal and social dimensions.

Meta-learning capability mediates the quality of learning outcome, and may also impact on what counts as learning. Those who are advanced in meta-learning realise that what is learned (the outcome or the result) and how it is learned (the act or the process) are two inseparable aspects of learning.

Greater understanding of one's own learning can include seeing how it varies across contexts. This is a crucial element in what is often taken-for-granted by educators – the transfer of learning. As seen above, learners may sometimes have a rich range of strategies but not use them in other learning situations. Effective transfer requires: (a) requisite skills (b) choosing to use the skills (c) recognising when a particular skill is appropriate in new situations, and (d) metacognitive awareness, monitoring and checking progress. People with metacognitive awareness, are more likely to recognise the applicability of a strategy in a different looking context.

Meta-learning plays a key role in a learner's self-regulation of learning, building the autonomy upon which even collaborative work thrives.

Meta-learning promotes the versatile learner.

It is for these reasons that meta-learning has substantial effect[s] on performance. Reviews of studies in the area of reading show that the teaching of metacognitive awareness, monitoring, and regulating has effects on performance 'among the larger ones that have been uncovered in educational research'.

Metacognition is a defining characteristic of our species: meta-learning is its dynamic epitome.

## Analysis

There are pressures in schools to complete the work set from a scheme of work and to cover the various elements of the National Curriculum. In this context, the development of meta-learning may seem difficult. It does seem highly reasonable, however, to ensure that high quality of learning and understanding of learning is developed in the classroom. If this means that slightly less curriculum is covered but that the quality of learning is superior then this is surely a price worth paying.

Riding and Rayner (1998, pp89–90, from Weinstein and Van Mater Stone, 1996) discuss how strategic learners demonstrate certain types of knowledge. They are able to understand about:

- themselves as learners;
- different types of tasks;
- tactics for developing new learning;
- prior content;
- current and future contexts where their knowledge could be used.

To enable this high-order learning, pupils may well demonstrate the following behaviours:

- developing a plan and selecting strategies to reach the learning objective;
- carrying out this plan and monitoring it formatively;
- modifying the plan according to the monitoring process;
- reflecting on the success of reaching the objective.

(Riding and Rayner, 1998, p90)

Key to the message for improving performance in the previous extract was the apparent paradox of not focusing on performance in order to raise performance. We may often use the terms learning and performance to mean the development pupils have demonstrated over a period. By focusing on the learning that comes from the various activities in a lesson we are able to consider the learning processes at work during the activities we set. All too often we look only at the outcomes of these activities – the tangible product of a lesson – rather than thinking what learning has occurred and what strategies for learning pupils have developed in a lesson.

A move towards a *learning orientation* rather than a *performance orientation*, as Watkins *et al* (2001) advocate, links closely to the ways we help motivate pupils and the beliefs they have about their learning.

Watkins *et al* (2001, p7) concluded from their work on meta-learning that:

- a focus on learning can enhance performance, whereas a focus on performance can depress performance;
- promoting learners as active and collaborative constructors of meaning with autonomy and self-direction can enhance performance;
- meta-learning is a necessary element for learners to select and use appropriate strategies and to be effective in a range of situations.

The final element in effective learning concerns reflection.

The need for teachers to understand why, what and how pupils learn is key to the success of their pupils. A knowledge of learning and motivational theories and the development of pupils' understanding of their learning process will help ensure high-quality practice. By linking this to ideas developed in the rest of the book you will be able to develop a holistic view of learning.

**Personal response**

In what ways have you understood the ways that you learn best? How did you come to these conclusions? How do you think these points may influence your teaching (for better or for worse)?

**Practical implications and activities**

Observe a lesson taught in your placement school. What pupil behaviour did you observe to suggest any learning strategies were evident?

Review a lesson plan that you have recently developed. How did you aid pupils' understanding of their learning? Annotate your plan to indicate how this meta-learning might be made more explicit in the future.

## Further reading

Boud, D Cohen, R and Walker, D (eds) (1993) *Using experience for learning.* Buckingham: Open University Press.

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Watkins, C, Carnell, E, Lodge, C, Wagner, P and Whalley, C (2001) 'Learning about learning enhances performance'. *NSIN Research Matters*, No. 13.