



## Learning Texts

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The National College for School Leadership is keenly aware that school leaders want up-to-date information about learning, teaching and classrooms. This publication responds to those needs by providing a review of the latest thinking about classroom learning.

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## 2 Introduction

The papers included here are written by leading scholars and researchers who set out to summarise their knowledge about learning. They also provide some prompts for leaders to consider.

As will be seen in the following texts, learning is the core concept of our times, concerned not only with the promotion of achievement, but with the development of learning capability and life-long learning. In order for this to happen, leadership is expected to be learning-centred, headteachers and deputies are expected to be the lead learners in their schools, and increasingly all leaders are seen as having a responsibility for supporting the learning of both pupils and adults with whom they work.

The National College for School Leadership argues for the importance of leadership for transforming learning, focusing on the creation of school settings that support and facilitate learning for students, teachers and leaders. The centrality of learning is captured in the College's goal of: Every child in a well-led school, every leader a learner.

If this ambition is to be realised, it is important there is a clear understanding of the concept of learning and the processes that support it. The articles included in this publication aim to develop greater understanding of what learning is and to suggest what it is that leaders need to know in order to develop the capacity for learning in their schools.

As a contribution to the debate about leadership and learning, the College invited some of the leading educational writers and thinkers with expertise in this area to offer their thoughts related to current knowledge about learning and the implications this has for teaching and for school leaders.

The contributors to this publication are: **Charles Desforges** from the University of Exeter, **Barbara MacGilchrist** and **Chris Watkins** from The University of London Institute of Education, **Dylan Wiliam**, from King's College London and **Jean Ruddock, Andrew Pollard, Maurice Galton** and **Colin Conner** from the University of Cambridge Faculty of Education.

Each of the contributions demonstrates that there is already an extensive range of knowledge about learning both practically and theoretically, but the difficulty has been how to interrelate these contrasting perspectives so that they can contribute to school improvement.

As you read through the materials, it will be seen that common and contrasting themes emerge. The introduction attempts to summarise these. The articles can be used individually or collectively, but they all raise important questions about learning and leadership and focus on issues we hope can be used to stimulate debate about learning in your school.

As an organisation committed to learning we always welcome comments on our work; if you have any reactions or responses to the ideas presented in this set of articles, we would be delighted to hear from you. You can contact us by sending an email to [research@ncl.org.uk](mailto:research@ncl.org.uk)

Each of the contributions to this set of learning texts has been written from the perspective of the writer and is based upon his or her experience, expertise and research interests. The contributions offer many contrasting perspectives on the concept of learning and the implications this raises for leadership, but there are also many issues that are common to them all. We hope that you will find them useful to stimulate discussion amongst your colleagues. They can be used as individual think pieces by focusing on the questions that are raised in each article. They can be shared amongst a group so that a collective response to the whole set might be generated, or the focus could be on the questions that are raised in this introductory review of the main themes that have been considered by the series as a whole.

Andrew Pollard suggests that, in relation to many of the themes addressed in this set of reflections on learning, it could be argued that leaders will face a tension between the lessons that can be drawn from the issues raised and the demands of national requirements. Despite this, all of the contributors to this document argue that sustained improvement in learning is more likely to occur in schools where senior leaders draw on principled and secure models of teaching and learning.

A number of key issues emerge from these texts. We believe that consideration of them will contribute to the development of such principled models.

Firstly, there is a problem of definition. **Dylan Wiliam's** article argues that in some cultures the concepts of teaching and learning are inseparable. They are so closely related that it is impossible to consider one without the other. This is also raised by **Colin Conner**, who suggests that teaching is totally unintelligible without an understanding of the concept of learning, and it should be an intention of teaching that all activities lead to learning. **Chris Watkins** suggests, however, that the way in which the term learning is used in school often contains many unexamined interpretations. So how is 'learning' interpreted in your school?

**Charles Desforges** and **Chris Watkins** suggest that the terms 'learning' and 'work' are too often used interchangeably and that 'the work metaphor' is a common feature of classroom language in many schools. They both suggest that we need to develop a language that allows us to discuss learning with pupils as well as amongst ourselves. Watkins' suggestion that teachers should agree with their classes that they will always refer to 'learning' rather than 'work' in classroom discussion provides an interesting strategy to start that process.

Several contributors argue that a great deal of classroom activity does not actually require pupils to learn anything, and tends to be concerned with occupying pupils rather than challenging them and extending their learning. This is significant in a context where outside school, as **Jean Ruddock** reminds us, pupils have considerable opportunities for independent and creative activity and are continually challenged to make autonomous choices and take responsibility for their decisions. In school therefore, it is argued, there is a need to build on this and involve pupils more actively in developing the learning culture of their school. Ruddock's paper provides evidence of the benefits that can accrue when this happens.

In relation to existing knowledge about learning, there is a substantial body of accepted wisdom, but there is limited evidence of the extent to which this is drawn upon and used by teachers and school leaders. Three clear distinctions emerge from the articles. Firstly there are the public and theoretical definitions of learning, which often derive from research and the writing of academics. Secondly, there are conceptions of learning that are private and personal and based upon experience. Finally, and probably most significantly, there are conceptions of learning that might be created through interaction, discussion and critical reflection with others. Reflection upon these three contrasting perceptions of learning and the extent of their influence on teaching and learning provide an important strategy for developing common understandings and interpretations. What theoretical perspectives dominate your thinking and that of your colleagues? How far do these correspond to common sense views about learning?

## 6 Introduction continued

What opportunities exist in your school to debate and illustrate these in action?  
To what extent do they influence what goes on in classrooms?

At the public and theoretical level, all of the contributors to this publication identify a range of contrasting perspectives derived from research. Definitions of learning range from it being seen as pupils receiving the teacher's delivered wisdom often by direct instruction, through to learning being described as an active process of making sense by the learner, to learning as participation, where there is a crucial role for language in the negotiation and creation of shared meanings. Each of these has a part to play in learning in schools, but as Wiliam suggests, each theory tends to be good at explaining things that a previous theory did not account for, but is not so good at accounting for things that a previous theory explained quite well. As he indicates, the time when we will have an overarching theory to fully explain learning is still some way off and as **Maurice Galton** comments, it is rather strange that we continue to search for some 'grand theory' of teaching and learning that covers every eventuality, when practitioners of older disciplines tend to adopt a more pragmatic approach. For the future, therefore, Galton suggests we need to be more flexible in the way in which we look at learning and be prepared to adopt different perspectives and approaches according to what has to be learned and the situation or context in which the learning is to take place. This seems to suggest that learning is situation and context specific. As a result, Galton argues that we should aim to develop specific models of learning that suit particular teaching objectives or the particular knowledge demands of a task.

At the private and personal level, teachers and pupils all develop their own theories about learning as a result of their experience, and, in the light of this, often hold strong beliefs about themselves as learners. Our theories and beliefs influence how we learn. For teachers they also influence how learning is planned as well as views about how learning is most effectively received. Many of us are unaware about how this influences practice, or how different learners react to contrasting learning experiences.

As **Pollard's** paper stresses, for learners to improve they have to believe in themselves as effective and successful learners. In schools we need to ask what we are doing that leads to the establishment of such a mind set and what else we are doing that counteracts this and prevents learning from taking place?

In relation to the third perspective on learning, which emphasises participation and the development of shared meaning, it is increasingly important that personal theories are made public and used to develop understanding and more consistent practice across schools and between schools. As **Desforges** suggests, individually and collectively, teachers are in possession of vast bodies of knowledge related to what makes learning effective. The major question concerns whether this is captured, shared and learned from.

In relation to shared views about learning, the work of **Ruddock** and others has demonstrated the extent to which pupils have a great deal to offer in extending our understanding of teaching and learning from their perspective as 'expert witnesses'. As Ruddock indicates, unfortunately there are many who have much to say about their experience of teaching and learning, but whose voices remain unheard.

All of the learning texts that follow agree that whilst each of the identified perspectives on learning can be seen as influencing some aspects of learning in schools, the most dominant at the moment is a transmission model of teaching and learning, reinforced by the pressure to cover the curriculum.

### Factors effecting learning

The articles identify a whole range of factors, which, it is suggested, contribute to improved pupil learning. Many of these factors apply to adults as well. It is argued by **Pollard** that learning is influenced by emotional, physical and social factors as well as the cognitive and intellectual concerns that dominate much of the current debate. **MacGilchrist**, **Conner** and **Watkins** all emphasise the extent to which motivation and self-esteem are probably amongst the most significant factors in determining the extent to which learners engage with their learning in school. They argue that the current emphasis on performance creates difficulties for many learners and teachers. Whilst there have been enormous gains in standards of achievement in recent years, significant problems still exist in relation to pupil motivation and engagement with learning. The dominance of a culture of performance has not helped. **MacGilchrist** reminds us that learning and performance are not synonymous.

A number of the authors make reference to the growing body of research evidence that emphasises the importance of using assessment to promote learning. Of particular relevance here are:

- the significance of questioning as a strategy to improve learning
- time on task
- feedback
- clarity about learning goals
- the criteria by which assessments are made
- the importance of developing learners as self-critical reflective learners, able to assess their own and others' work fairly and accurately

In relation to the role of questioning for learning, appropriate questions can support, extend, challenge and guide the learning process as well as inform the teacher about the sense pupils are making of their learning. **William** suggests that questions should be used either to gather information that the teacher genuinely needs to inform their teaching or to stimulate learners to think. **Galton** also comments on the potential of questioning to improve learning but reminds us that the evidence related to improvements in questioning, despite advice about how to improve, has not been particularly successful. In the light of this it is important to ask, what strategies are you developing to improve the quality of questioning in your school?

Probably the most significant feature of questioning is the time pupils are given to respond to the teacher's questions, hence the importance of allowing suitable wait times between a teacher asking a question and the pupil answering, or being expected to answer. **Galton** identifies two types of wait time which are crucial for improved learning. The first of these consists of the time the pupil is given to respond before the teacher either repeats the question or seeks an answer from someone else. The second is the time a pupil is allowed for elaboration after his or her initial answer, before the teacher either paraphrases the pupil's response or offers further 'cued elicitations'. Each of these is significant for improved learning and each can be developed.

Several of the contributions argue for the importance of learners being clear about the goals of any piece of learning and, more importantly, the criteria by which the quality of their work and their success is judged. The type and quality of feedback to learners about their learning is also raised by a number of the authors as fundamental to supporting the learning process. **MacGilchrist** stresses the need for feedback that enables learners to identify what they need to do to improve and develop ideas about how to set about this. **Galton** and **William** argue that if classrooms are to maximise opportunities for learning, they must maximise the opportunities for pupils to talk about their learning. Through dialogue with others, pupils are able to 'talk their way into understanding'.

In the light of this, what is the role of talk and discussion in the classrooms in your school? Is it valued? Or is effective teaching seen as that which encourages silence?

The importance of metacognitive activity is emphasised as an important strategy for learner development, learning how to think and become aware of one's own thinking processes. **Watkins** and **MacGilchrist** emphasise the importance of 'metalearning', the need to help learners to learn how to learn and to reflect on their own learning processes. **Galton** talks of helping learners to become 'metacognitively wise', so that they are able to regulate their learning. It is also suggested that when learning something new, we need to help pupils reflect on how it makes them feel and to reinforce and model the fact that learning is sometimes uncomfortable. Through the focus on learning to learn and the role of the pupil in this, it is argued we develop more versatile learners.

In addition to developing self-regulating learners, it is also suggested that learning should be active and should build on what is currently known and understood by learners. In this context it is important to remember that activity has to be seen as including mental as well as physical activity. However, the fact that learning is an active process of making sense says nothing about how to get learning to happen. For further learning to take place it must include challenge of existing understanding and misunderstanding.

The contribution from **MacGilchrist** reminds us that in any classroom, learners will come from a wide range of backgrounds and circumstances, all of which will effect whether learning takes place. In relation to this, the support provided by the home is identified as a significant factor in supporting learners to become more effective. Several of the authors argue that strategies to link home and school to establish common understanding and expectations need to be developed. The contribution from **Pollard** also illustrates the differential effects of different teachers on a learner's progress, achievement and self-concept as a learner over the span of their engagement with school.

An issue of current interest in many schools relates to attempts to adjust teaching to pupils' preferred learning style. Whilst there is considerable enthusiasm for the assumed benefits of such an approach, a number of contributors are cautious about this and advocate the importance of teachers using a range of teaching strategies so that all pupils have opportunities for working in their preferred way but also being challenged to move outside this. It is emphasised that obstacles, opposition and conflict can be important motivators to learning. In this way we develop learners with a broader range of approaches that contributes to their developing capacity as life-long learners.

## Implications

A whole range of possible implications arise from consideration of the issues addressed in the eight articles included in this publication. For example, the following themes have been identified with a set of associated questions, which could be used to stimulate discussion. The important question is, what evidence do you have for the claims you make about each of them?

### The importance of clarifying understanding

What knowledge and beliefs currently exist about what is meant by learning in your school? Collectively, teachers are in possession of vast bodies of knowledge about what makes learning effective. Is this captured and shared? To what extent are values and beliefs about learners and learning to which everyone subscribes made explicit? How is the extent to which these are being enacted in day-to-day practice reviewed?

**Foster a strongly positive learning culture**

Try to consider what it is like to be a learner in your school and in your classroom. Invite colleagues to ask their pupils, 'What is it like to be a learner in this school?' How would children and teachers in your schools respond to this question? Ask yourself, in what ways have I been advancing a culture of learning in my school? Also, to what extent does classroom activity 'occupy' learners rather than require learning to take place?

**Create the right conditions for learning to take place**

To what extent is there evidence of respect, fairness, trust and support as well as challenge in the learning context of the school? Is this consistent throughout the school? What views do learners have about this? How far are you creating a context in which learners in your school believe in themselves as effective and successful learners?

**Develop assessment for learning**

What are you doing in your school to develop expertise in questioning, improve the quality of feedback and provide clarity about learning goals and the criteria by which assessments are made? In what ways are you developing learners as self-critical reflective learners, able to assess their own and others' work fairly and accurately?

**Develop strategies for discussion about learning**

As Watkins and others have argued, developing skills and understandings associated with metalearning (or learning about learning) is of importance, and effective learning includes this extra crucial ingredient. It is supported through a cumulative process of noticing aspects of learning, developing conversations about learning, reflecting on learning and making discussion about learning an element of learning. The purpose is to enrich the learner's view of learning (not the learner's categorisation of themselves as a learner) Metalearning promotes the versatile learner and someone more likely to see learning as a life-long enterprise. To what extent is this happening in your school?

**Involve learners in the process**

Ruddock reminds us that probably one of the most significant voices in school improvement is the voice of students. What is the role of talk and discussion with students in your school? Is effective teaching seen as that which encourages silence? Ruddock emphasises that it takes time for teachers and pupils to work together to build a climate in which they feel comfortable about managing a constructive review of teaching and learning in their schools, but the commitment and active involvement of school leaders is crucial.

We hope the ideas raised in this publication will provide a knowledge-base from which to start the process of reflecting and building.

# On Learning and Teaching

Charles Desforges

In this paper I argue that schools would be even more successful than they are now at promoting achievement if we could all learn to share and use all the knowledge we have about learning. I recognise that there is a vast body of knowledge about learning evident in the everyday practices of teachers. This knowledge is difficult to get at so it is difficult to share. There is also a small but strong body of scientific knowledge about learning to be gleaned from research. This knowledge is easy to get at but difficult to apply. The trick we need to perform is to bring practical knowledge and theoretical knowledge together to promote advanced teaching practices. I discuss some of the areas where leaders in schools might get significant return on effort in promoting pupil achievement through teaching developments based on sharing and applying knowledge about learning.

## On Learning and Teaching

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### Introduction

Schools are set up to promote pupil achievement broadly conceived to include the acquisition of those concepts, skills, attitudes, values and personal and social qualities likely to promote self-fulfilment and good citizenship. Given the rate of social and economic change it is generally agreed that most of us will prosper best if we are committed to life-long learning. In this light, learning is the core concept of our times. From this point of view it has been argued that schools should not only promote achievement, they should also teach pupils about learning in order to equip them to be life-long learners. This aspiration places educational institutions under increasing pressure to be ever more efficient and effective. Increased efficiency will flow to the degree that schools are focused on learning and to the degree that the very best practical use is made of our knowledge relevant to learning.

Teachers, individually and collectively, are in possession of vast bodies of knowledge relevant to promoting achievement but this knowledge is not easy to access. It is rarely written down and it is difficult to articulate. Mostly it is exemplified in the day-to-day practices of teachers as they work behind the closed doors of their classrooms. Major efforts are currently being put into identifying and sharing these bodies of professional knowledge relevant to learning. The Networked Learning Communities of NCSL are exemplary in this respect. Until this work bears fruit, excellent professional performance lies beyond our understanding (ie beyond our capacity to theorise) and until we can understand it, it will prove exceedingly difficult to teach other teachers from it.

Fortunately there is another body of knowledge about learning that is already scientifically well established. I would go so far as to say that we know as much about learning as Sir Isaac Newton knew about motion when, in the 17th century, he set out his celebrated laws. Make no mistake, scientifically these laws were and are of the utmost significance. When NASA sent rockets to the moon in the 1960s, they used Newtonian physics.

The 300-year gap between theory and practice is not unusual in many fields. Medicine, architecture and engineering frequently find their theories hundreds of years in advance of their practice. By the same token, practices are often hundreds of years in advance of theory. Stockbreeders, for example, were in effect using Darwin's theory of evolution centuries before he penned it.

These theory–practice gaps should not be used to privilege either theory over practice or practice over theory. On the contrary, they should teach us to value both bodies of knowledge and challenge us to bring them into fruitful collaboration. It is useful here to refer to the learning model adopted by NCSL's New Visions Programme for Early Headship. This model recognises three types of knowledge: that which is public (eg theoretical models), that which is private and personal (eg an individual's own understandings) and that which is created in the interactions between people in working practices. In this model our challenge can be rephrased:

- How can we learn to understand what we do so that we can teach good practices to future generations?
- How can we learn to use what we understand about learning in the difficult circumstances of schools?
- How can we access, pool, validate and put to use the knowledge of headteachers working collaboratively?

## Scientific knowledge about achievement

There is a vast research literature on teaching and learning. In my opinion most of it is incomprehensible and a great deal of that which is comprehensible is not at all relevant or useful for work in schools. That said, there are some findings which come up time and time again, are reliably established across a wide range of settings, and which are directly relevant to our challenge in that they refer directly to the school or classroom and to curriculum contents rather than to the more esoteric settings of experiments. I outline these findings in the following sections.

### 1. The major drivers of attainment

There are only so many hours in the day so whatever we want to achieve it is useful to know how we might get our best return on effort. If we are going to invest time in enhancing pupils' attainment, where might we expect to make most impact? Margaret Wang (1993) and colleagues reviewed a massive amount of research on just this question. They examined the impact on pupil attainment of a wide range of school reform and development initiatives including curriculum development, examination reform, accountability and inspection programmes, teacher development programmes and particular teaching and learning strategies. They were able to draw up a league table of effectiveness at this programmatic level. The top four drivers of attainment are as follows:

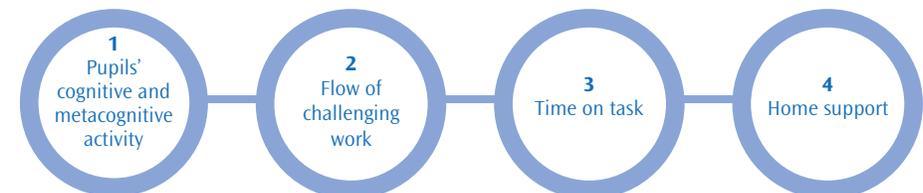


Figure 1. Major drivers of attainment (from Wang et al, 1993)

Far and away the most effective factor in raising attainment was activity that made pupils' minds work. Broadly described as 'cognitive activity' this includes problem-solving, thinking, analysing, synthesising, hypothesising and generally problem-directed thinking. The effect on attainment was enhanced to the degree that pupils were required to reflect back on their thinking, ie to think about thinking in order to learn more general lessons about managing their own intellectual processes. This reflection on thinking is generally known as 'metacognition'. In a later article in this series, Chris Watkins (2001), has powerfully elaborated the notions of metacognition and learning about learning.

The second most effective factor in promoting attainment was identified as the flow of challenging work. 'Challenging' here, of course, refers to that work which requires the engagement of pupils' cognitive and metacognitive processes. The notion of 'flow' refers to the requirement that cognition and metacognition should not be timetabled in occasional slots. They should be continuously demanded.

The third factor was time on task. The tasks in question must be challenging (as above) and it follows that the more time spent on such work the more return there is on effort in terms of attainment.

Plenty of research has shown that a considerable amount of time in the teaching day can be lost by pupils being off task, or misused by pupils being engaged in unchallenging work. Work in maximising time on challenging tasks stands to return rich rewards for pupil attainment.

The fourth factor in Wang's league table is home support. This is multi-dimensional. It involves the home sharing and promoting the same values as the school. It also involves, to some degree, extending the learning day out of school time to maximise the time on task factors. This challenge is, of course, increasingly difficult where it is most needed but the research is clear that where home support is evident, enhanced achievement follows.

## 2. Successful learning settings

Research consistently shows that some classroom experiences are significantly more successful than others in promoting achievement as broadly conceived. John Bransford and his colleagues (1999) have reviewed the mass of evidence on schoolroom learning and have identified the characteristics which consistently define successful settings for learning. These characteristics are presented below:

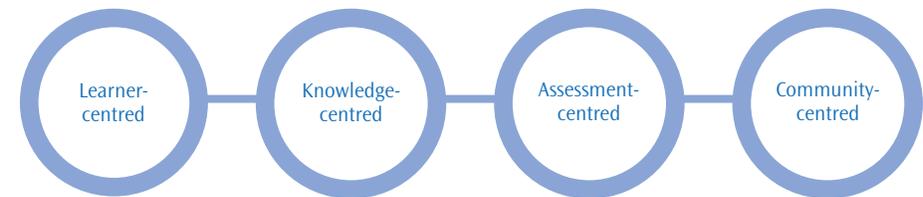


Figure 2. Characteristics of successful learning settings (from Bransford et al, 1999)

These characteristics are not in a league table. They are the ingredients of a successful cocktail. Each is indispensable.

'Learner-centred' does not refer to a romantic view of the curriculum. It refers to the well-established fact that learners always know something about the topic their teacher is about to engage them in. The learner's knowledge consists of a pre-formed body of concepts, skills and attitudes related to the topic to hand. The pupil's attitude might be positive or negative; their knowledge might be mistaken, misguided or plain misleading. In respect of science for example, most 10-year-olds are convinced the world is flat, that an animal is a furry creature with a leg at each corner (ie birds, snakes, insects and humans are not animals) and that vision is accomplished because the eye emits rays. Whatever the case, this is the pupil's starting point and if the lesson as presented, or work as enacted, does not take this into consideration there exists the capacity for a great gulf to open between the teaching process and the learning process.

This gulf is more than evident in, for example, the public misunderstanding of science following at least 10 years of science education. This fact calls for a profound consideration of starting points in teaching and a determination, at this juncture, to be learner-centred whatever the curriculum content.

'Knowledge-centred' refers to the requirement of a successful learning setting to be complex rather than simple, rich rather than spare, challenging rather than easy. Good settings should be rich in complex material demanding cognitive activity on the part of pupils and certainly demanding knowledge application and problem-solving. Human learners thrive on complexity that gives the opportunity for analysis, synthesis, problem-solving and the like. In out-of-school life, young humans meet and learn language in all its complexity. For example, four-year-olds know that the word 'big' has many, radically different meanings and nuances as in 'big piece of pie', 'big baby' and 'big school'. Contrast this with 15-year-old youngsters taught vocabulary through definitions ('stimulate' means to 'stir up'). Asked to make a sentence using the word 'stimulate', one youngster wrote, 'mother stimulated the soup'. We simplify and decontextualise at the learner's peril.

'Assessment-centred' refers to the fact that all learning settings are assessment driven. Teachers 'teach to the test' and learners quickly calculate what they get praise, reward and grades for and try to deliver that. Sadly, most classroom assessment systems provide praise for only some educational 'goods' such as effort, neatness or work completion. There is little praise for cognitive and metacognitive activity. Good learning settings have assessment systems in alignment with the more profoundly desirable education outcomes of cognition.

'Community-centred' refers to the fact that pupils spend more time out of school than they do in it and that their in-school transactions are inevitably informed and shaped by what they know and who they are in the community at large. This involves recognition, through the learner-centred factor of pupils' starting points, attitudes and knowledge-bases.

The wider community is both a rich quarry for school/curriculum starting points and a stage on which to build extensions to the curriculum day. This approach is well illustrated in the recent work of Marsh and Thompson (2001). These researchers worked with teachers, parents and children in the promotion of early literacy skills amongst three- and four-year-olds. They established, through observation and interview, the literacy practices of children in the home. Finding that these focused on popular culture and media, they designed 'media boxes' as resources for literacy development both in the home and in school. In this way the learning and teaching resources drew on the families' cultural capital and looked to build on it developmentally.

### 3. Losing learning in benign settings

Significant numbers of pupils do not turn up to school or turn up only to 'bunk off' physically or intellectually. These pupils constitute a major challenge to systems way beyond schooling. Most pupils however do turn up and are relatively biddable. For one reason or another however, they are less than stretched in terms of achievement. These pupils are not a problem in any direct or confrontational sense. They are, nonetheless, a great concern however benign they remain. Research has indicated the major areas where learning loses momentum or progression and hence major areas where teachers' hard work does not have a good 'learning premium'. These areas are shown in Figure 3.

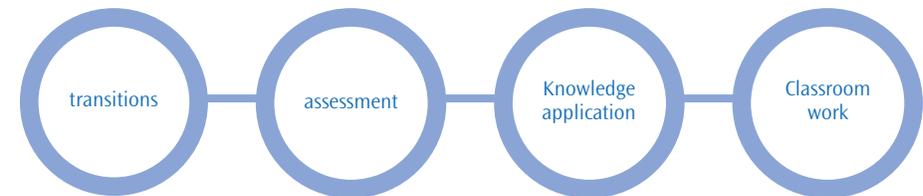


Figure 3. Lost learning opportunities

These sites of lost learning offer ground for a rich return in terms of achievement if advanced professional practices could be brought to bear.

In regard to transitions it has long been known that when pupils move from primary school to secondary school learning progress loses momentum (see Galton et al, 1999). This problem has been seen to have both a social and an academic dimension. The social dimension (broadly speaking, those problems of fear and anticipation on moving to a new culture) are largely successfully dealt with through programmes of pastoral care. But the academic problem remains a major concern. Many pupils make little progress on transfer and a significant number perform less well after a year in secondary school than they did in primary school. There is a strong suspicion that this problem of transition operates at the home/school and the school/HE boundaries. The problem is not caused by unruly or unwilling pupils nor by incompetent teaching. It resides in systems management.

With reference to assessment it has long been suspected that the vast amount of work teachers put into grading and commenting on pupils' work gets little if any return in terms of advancing pupils' attainment. Black and Wiliam (1998) have recently exposed the scale of this matter and their work has been seen to have major significance in discussion of the pedagogic economy of teachers' work. Black and Wiliam recognise that there is a place for assessment to produce grades but that we cannot expect such practice to promote learning. Such a view is a major challenge for advancing pedagogic practice and Black and Wiliam together with partner schools are at the forefront of developing approaches to assessment which bear directly on pupil progress and thus provide a much better pedagogic return for teachers' time.

The third area where learning is compromised even in benign circumstances is in regard to knowledge application. Schools worldwide are relatively successful at teaching bodies of knowledge but they are much less good at getting pupils to be able to use and apply this knowledge in new settings or in problem-solving.

A classic illustration of this was provided by a national survey of mathematics attainment. This showed that 86 per cent of 12-year-olds could correctly calculate  $225 \div 15$ . When the same pupils were set the following problem, 'A gardener has 225 flower bulbs which he must put equally in 15 flower beds, how many bulbs will he put in each bed?' only 30 per cent could solve it. Approximately 50 per cent of the age cohort thus had a safe grasp of the basic skill of long division but could not apply it where it was relevant in a problem. This failure to apply acquired skills is evident in all areas of the curriculum. It is a long-standing challenge to educational systems everywhere.

The fourth site on which learning is lost even under the most benign of teaching circumstances is manifest in the large amount of classroom work which is just that: work. Much classroom activity does not require pupils to learn anything; it is occupying rather than challenging. The work metaphor runs deep into the conception of classroom life held by most pupils and many teachers.

People 'work hard', transgressors are told to 'get on with your work', parents ask 'what did you do at school today?' Pupils working diligently in classrooms are rewarded for their effort or for work completion or for neatness. The word 'learning' is not breathed and learning is not required.

This situation is well exemplified in a Year 6 science lesson I recently observed. The lesson was perfectly managed in terms of materials and order. It was organised around a work card which required pupils to examine a range of types of paper under a microscope. They also had to note what they saw when holding the paper up to the light, when they dropped water on it and when they scrunched it up. The pupils did all these things, were very busy, made neat notes, handed their books in and departed in good order. Everyone had apparently enjoyed the lesson. Sadly, nobody learned anything and nobody thought anything – at least about the structure of paper. The 'work card' was exactly that. The lesson, very common in format for classroom activity, failed on all the criteria revealed by Bransford.

It did not start with any attempt to relate the work to pupils' relevant knowledge, it was reduced to a set of very simple procedures, the assessment (implicit in the teacher's praise) was focused on neatness, good order and work completion and the work was totally decontextualised.

Most pupils are perfectly happy with this arrangement. They expect their teachers to set them work and they are pleased to do it. Indeed they might become difficult if not downright intransigent if thoughtful learning is required. Moving from this comfort zone will not be easy but it is essential.

These four sites, transitions, assessment, application and classroom work, involve teachers in a huge amount of industry, planning, interaction and provision and yet each is associated with very poor returns on effort in terms of pupil attainment. Indeed, as I have suggested, in some cases (assessment) teachers efforts are almost entirely wasted in conventional approaches whilst in other cases (transitions) current practices are associated with negative effects for too many pupils.

### Some implications

There is a great deal of knowledge in the system that, effectively applied and generalised, would have a major impact on pupil achievement. Some of this knowledge may be said to be theoretical in that it can be stated as general propositions which are derived from research (see the above characteristics of successful learning settings). Much relevant knowledge is manifest in professional practice. There are teachers who have developed processes of assessment which bear directly on their pupils' progress. Other teachers are successful at teaching knowledge application. Sadly their successful methods are not written down and thus cannot be shared except with close colleagues.

These bodies of knowledge need to be brought together in efforts by communities of teachers to develop advanced teaching practices.

Because time is short and there are lives beyond school, this bringing together of knowledge needs to be problem-focused. I suggest the sites I have described offer the best return on our efforts. The target problems would be:

- How can we promote maximum learning progression at points of transitions in schooling?
- How can we fashion teachers' assessments of pupils' work so that it makes maximum impact on their progress?
- How can we better teach pupils to use and apply the knowledge and skills we inculcate in them?
- How can we avoid the metaphor of 'work' for classroom activity and ensure that more engagement with the curriculum is about learning and demands cognitive and metacognitive activity?

These are not to be taken as philosophical or rhetorical questions. They are straightforward empirical questions. They call for leaders who will focus schools' attention on key learning sites and help colleagues to form learning communities within and across schools to conduct those professional inquiry and development projects which will acquire and create the knowledge-base on which to advance pedagogic practice. Some of this knowledge will be found in an audit of best local practice. Some of it will have to be invented in lesson development work.

A good starting point might be to examine individual lessons using Figure 2 (see page 19) as an evaluation and design template. Examples of school leaders working in this direction can be found in the resources section of the [lessonresearch.net](http://lessonresearch.net) website.

## On Learning and Teaching continued

### Possible lines of action

Any action must, of course, be taken in the context of personal settings. Schools have already heavily invested in development plans. CPD to raise attainment is already in full swing. What does a knowledge of learning bring to the teaching party? It might be worth considering the following lines of investigation:

- Can the learning loss in benign settings be audited in your school? Where are you strongest? Where are you weakest? Where might you get best return on effort?
- Who in your network, at whatever level, is doing good work in any of these settings? Specifically, what do some teachers already know and do that might be transferable to other teachers' practices? How can this knowledge be audited and validated? How can it be represented (written down, videoed, talked about) in order to share it?
- How might pupils be involved in identifying good teaching practices. Note here that pupils are often very protective of their safe working practices – they notoriously do not like challenging teaching. There are probably good reasons for this. What do your staff know/do about taking pupils beyond the comfort zone of classroom work?
- What leadership and management functions would be necessary to initiate and sustain these lines of enquiry and professional development?

One thing is certain. In developing a professional knowledge-base focused on learning there is everything to play for. Pupils will benefit directly and the profession of teaching will be enhanced.

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# What Do Leaders Need to Know About Learning and Teaching?

Dylan Wiliam

## What Do Leaders Need to Know About Learning and Teaching?

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### What is learning?

In many ways, the idea that one can separate learning and teaching is very odd. There are many languages (for instance Russian and Welsh) in which one simply cannot do so – the same verb is used for both, so that ‘I am teaching’ comes out the same as ‘I am learning’. Ofsted’s framework for the inspection of schools requires inspectors to distinguish between quality of learning and quality of teaching, but what are we to make of a lesson in which the quality of teaching was high, but the quality of learning was low? It is rather like claiming that an operation was a success, but the patient died.

For this reason, it is neither possible nor helpful to separate learning and teaching. Teaching is any activity that is intended to produce learning. And learning? Well, it turns out to be rather difficult to define. The *MIT Encyclopedia of the Cognitive Sciences* defines learning as “a change in an organism’s capacities or behaviour brought about by experience”, but immediately acknowledges that this definition includes increases in muscular strength brought about by exercise, which would not normally be thought of as learning.

Over the last hundred or so years, a variety of theories of learning have been proposed, but the relationship between these different theories is not at all clear. In the physical sciences we expect each new theory to incorporate the theories it replaces (as Einstein’s theory of gravitation subsumed Newton’s). The same is not so for theories of learning. Each new theory tends to be quite good at explaining the things that the previous theories did not, but is generally quite bad at accounting for the things that the previous theory explained well.

## What Do Leaders Need to Know About Learning and Teaching? continued

### Learning is making associations

The earliest theories assumed that learning was the result of making associations. A certain stimulus would be associated with a particular response, which might then act as a further stimulus and produce another response. Learning consisted therefore of building up chains of such associations. With this associationist view of learning, failure to learn results from a failure to form the correct chain of associations, which is addressed through reinforcement of the weak links.

Such theories were adequate for explaining how some kinds of learning – such as learning multiplication tables – took place, and what to do if it did not, but there were other kinds of learning that could not easily be explained with the idea of stimulus and response. These include the kind of instant restructuring of one's thinking that happens when one has a kind of 'a-ha' moment such as when one thinks about the use of the atomic bomb on Japan not as the closing act of the Second World War but as the opening act of the Cold War.

An associationist view of learning also predicted that if students failed to learn something, their failures should be random, but as much work in the 1960s and 1970s showed, there was a great deal of similarity in the kinds of misconceptions that students developed. For example, if young children are asked, "What causes the wind?" one of the commonest answers is, "trees". This is clearly not the result of misremembering something, but the result of an active attempt by the child to make sense of the world.

### Learning is active

Recent theories have therefore emphasised the idea that learning is an active rather than a passive process, but it is important to bear in mind that these constructivist theories, as they are sometimes called, are theories about what happens when learning takes place, and not theories about how to get learning to take place. The fact that learning is an active process of sense-making says nothing about how to get learning to happen. There is no inconsistency in having a constructivist view of learning and yet believing that learning can take place with the students in passive roles in learning situations. After all, we still need to account for the fact that at university some people do manage to learn something when sitting in lectures.

### Learning is participating

Associationist and constructivist views regard learning as a process of acquisition of knowledge, or skill, or whatever. However there are some forms of learning that don't fit this idea very well. For example, when someone learns how to be a teacher, then they do, of course, acquire new knowledge and skills, but they also learn how to fit in as a teacher. It is very difficult to describe this kind of implicit learning as acquiring any new knowledge or skills, and for this reason, there has been growing interest in recent years in the idea of learning as participation. The idea of learning as participation is very helpful for thinking about why students cannot apply material learnt in one context in another (for instance where students can solve equations in mathematics but not in science). But there are occasions when we do expect transfer to occur. This is well illustrated by the (allegedly true) story of an accident caused by a motorist driving the wrong way round a roundabout. When asked, "Haven't you ever driven round a roundabout before?" the motorist said, "Yes, but not this roundabout". This reply seems absurd precisely because we do expect some things to transfer from context to context. After all, when we arrive at work, we do not need to check that we are the same person who left home.

## What Do Leaders Need to Know About Learning and Teaching? continued

### No one perspective

These different views of learning each capture something important about learning, and each leaves out important aspects too. One day, we may have a grand unified theory of learning that subsumes all these different views, but such a theory is currently a long way off. For the foreseeable future therefore, we must be flexible in the way we look at learning, and be prepared to adopt different views of learning in different situations.

To make things worse, we cannot adopt one view of learning for one part of the curriculum and another for another part. At first sight, it might seem that the learning of multiplication bonds is a simple matter of strengthening associations, so that re-enforcement activities such as chanting tables might seem to be the most appropriate approach. However, many students 'repair' defects in their recall by quickly assembling and combining the facts that they can recall. Students who understand the connections between facts recall them better, and for longer, than those who just know them by heart.

### What does this mean for teachers and teaching?

Even if we could agree on one view of what learning is, that would still tell us very little about the best way to foster that learning. Even when skilled teachers set out to teach particular things, more often than not, this is not what gets learnt (although something else usually does). It is almost impossible to predict what a particular student will learn from a given bit of teaching. In fact, it is not even possible to identify good teachers just by looking at them teach. While experts may agree on which teachers look good in the classroom, the progress made by students taught by these teachers turns out to be no different from students taught by other teachers.

We cannot escape the fact that teaching is a very mysterious process, not least because it requires a knowledge of general principles of teaching combined with particular knowledge of the school context. Therefore there can be no universal rules about what constitutes good teaching. There are general strategies, but these general strategies can only be put into practice through specific techniques, and choosing which technique would be the best one to use with a specific teaching group on a specific occasion will require professional judgement. A particular technique might be exactly the right thing to do on one occasion, with a particular class, and exactly the wrong thing to do with another class (or even the same class on a different occasion).

Given all this, what can be said about good teaching? Merely that there are some broad principles that can guide teaching, that most good teachers will use much of the time. There will be teachers who teach well without doing any of them. However, it is likely that they would be even better if they did. These ideas then are offered not as a prescription for practice but as a framework to guide some reflection on practice. The implied question is to what extent does practice in your school reflect these principles?

### How should we cater for differences in learning styles? Or should we?

There is much interest currently in tailoring learning to students' preferred learning styles. Quite apart from the impossibility of catering to 30 or more idiosyncratic learning styles, even if we could do so, it is probably a bad idea. Students are usually more comfortable learning in their preferred learning style, but sometimes learn more when they have to adjust to a different learning style for a period. The message from this research is therefore that it is not necessary to attempt to individualise teaching to suit each student. Teachers should use a range of strategies, and cater to a range of learning styles, so that all students get some experience of being in their comfort zone and also being challenged to move outside it.

## What Do Leaders Need to Know About Learning and Teaching? continued

### Quality assurance rather than quality control

Quality control in teaching consists of inspecting the results of the teaching after it has happened (eg end-of-topic testing). From this we learn that students either have learnt what they were meant to, in which case we go on to the next topic, or they haven't, in which case we put them through the process again (or say to the students, "Don't worry, we'll do this again next term"). In contrast, a quality assurance approach to teaching would require that we monitor the quality of learning while it is happening, and if necessary, change the course of the lesson in the light of the information we get about the learning that is taking place. On a smaller scale, rather than keeping learning on track by marking students' work after the end of the lesson, it is far better to keep the learning on track while the students are still there.

### Causing thinking

Most of the questions asked by teachers are 'low-order' questions – questions that require factual recall, or, worse, involve students in a game of 'guess what's in teacher's head'. In some classes, this is taken to an extreme form with students and teachers involved in a high-speed exchange which is mistakenly believed to inject pace into lessons. Such activities may improve the speed of recall of learnt responses, and may help to reinforce associations, but they rarely produce new learning. Productive thinking is quite simply impossible at such speeds. The purpose of classroom questioning should be either to collect information that the teacher genuinely needs to inform teaching, or to cause thinking, and the latter purpose should predominate. This principle of causing thinking also extends to feedback. Most feedback to learners does not improve learning because it tends to focus attention on the self-image of the learner, rather than identifying what needs to be done to improve. Put simply, to be effective, feedback should cause thinking.

### Understanding goals

If a teacher holds up a piece of student writing and asks "Why do I think this is good?" the most common responses are likely to be, "Because it's long" and "Because it's neat" – even in classrooms where the teacher does not emphasise these goals. It is essential therefore that teachers ensure as far as possible that students understand what counts as good work. Sometimes this will be through the use of clear objectives, but much – perhaps most – school work cannot be reduced to simple objectives in this way. Sometimes the best that can be done is to help students develop what Guy Claxton calls "a nose for quality". What is surprising is how quickly even the youngest learners can come to share a notion of quality, even if it cannot be expressed in words. A crucial ingredient of effective teaching is therefore helping students in this way, particularly by modelling quality work and performance.

### Small group work

There is a tendency to regard talk in classrooms as an optional extra. The important thing is students know something, and if they can articulate it, then so much the better. However, this ignores the central role that talk has in producing learning. As the philosopher Merleau-Ponty once said, "When I speak, I discover what it is I wanted to say". In whole-class discussion, the opportunities for individual students to speak are necessarily limited, and so, if classrooms are to maximise the opportunities for learning, they must maximise the opportunities for students to talk about their work, which means working in small groups. The crucial ingredients of effective small-group work are shared goals (so that students are working as a group, rather than just working in a group) and individual accountability (so that there are no 'passengers'). There are many ways to organise this, but peer assessment is a particularly effective focus for small group work.

## What Do Leaders Need to Know About Learning and Teaching? continued

### Summary

Most psychologists do not study learning in school for the simple reason that it is far too complex. And yet teachers have to accomplish this every day. There are no simple recipes for effective teaching, but there are some general principles that appear to be important. No one view is adequate to account for all kinds of learning, and so we have to be prepared to adopt different perspectives for different situations. Teaching has, then, of course, to be flexible. Teachers must cater for a range of learning styles, should wherever possible adopt quality assurance rather than quality control approaches, and should aim to maximise the time that students spend thinking in classrooms. They must help learners acquire the notions of quality they (the teachers) already possess, and must provide opportunities for students' understanding to be developed through talk, especially in small groups.

As noted above, these features do not guarantee good teaching, and for some teachers, they may not even be necessary. But they do provide a framework that can be used to structure reflection on practice.

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## What Leaders Need to Know about the Relationship between Learning and Teaching

Colin Conner

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An increasing number of writers in the field of school improvement have argued that amongst the many things for which school leaders are responsible, the greatest priority should be the management of teaching and learning. Headteachers are expected to be seen as 'lead learners' as well as 'head teachers'. Subject co-ordinators have responsibility for ensuring that quality learning is taking place and high standards are achieved, as well as leading colleagues in relation to their specific subject. In order to fulfil these responsibilities, it is essential that there is clarity about the concept of learning and the associated implications for teaching. This contribution presents an overview of the ways in which the concept of learning has been defined and identifies implications that arise for the organisation and management of teaching.

## What Leaders Need to Know About the Relationship Between Learning and Teaching

### Unpacking the concept of learning

A recent publication about supporting effective learning claims that, “schools exist to promote young people’s learning” (Carnell and Lodge 2002:7). ‘Learning’ is a word we use regularly in school, but what exactly do we mean by the term? What does it mean to say that someone has learned something and how does learning take place? Stephen Rowland (1995) reminds us of the slippery nature of the concept when he suggests that:

“Educational processes are elusive. Rarely can we look at an educational experience and say: ‘that was learning’. There are moments ‘when the penny drops’, but these are the exceptions. Learning normally takes place without us being fully aware of what we are learning, or how.”

Bruner (1966: 113) argues that learning is one of the most fundamental of human activities. He comments:

“The single most characteristic thing about human beings is that they learn. Learning is so deeply ingrained...that it is almost involuntary and thoughtful students of human behaviour have even speculated that our specialisation as a species is a specialisation for learning.”

Given this assertion, it would be easy to assume that there is agreement about what learning is and how it should be organised. As one might expect, however, there are contrasting views about how it might be most effectively undertaken. Despite this, most people emphasise that teaching and learning are inextricably linked. As the philosopher Paul Hirst (1974) argues, teaching is totally unintelligible without an understanding of the concept of learning, and it should be an intention of teaching that all activities lead to learning. This is reinforced in a fascinating study entitled ‘The Teaching Gap’ by Stigler and Hiebert (1999: 132), where they argued that the primary goal of teaching is student learning. So, what do we mean by learning?

### What do we mean by ‘learning’?

The Oxford English Dictionary provides a starting point. To learn means to:

- get knowledge (of a subject), or skill by study, experience or by being taught
- commit to memory
- become aware of by information or observation
- ascertain
- receive instruction

What emerges from the above is that learning can be broadly defined. For the most part, it cannot be done for you, although there is a recognition of the role of the teacher in providing instruction. Not all learning theorists accept the dominant role of the learner, however. One of the best attempts to summarise the range of potential ways in which learning is perceived comes from the work of Saljo (1979), who explored the everyday conceptions of the general public. Saljo interviewed adults and asked them what they understood by the term learning. His analysis of their responses identified five qualitatively different conceptions of learning, with contrasting implications for teaching.

### Learning as an increase in knowledge

This view of learning is seen as a passive process where new facts and knowledge are added to the existing store of information. It is something that is done by teachers rather than learners and it is teachers’ responsibility to pass their knowledge on to their pupils in a disciplined way.

## What Leaders Need to Know About the Relationship Between Learning and Teaching continued

### Learning as memorising

This conception of learning is similar to the first in that what is learned are facts and information and there is no expectation that what is learned will be transformed in any way. However, there is a recognition that learners have an active role because they have to develop strategies such as rote repetition to be able to remember new information. These can also be provided by the teacher. This view sees learning as the accumulation of unrelated facts because the learner does not necessarily recognise the need to link them to pre-existing knowledge.

### Learning as the acquisition of facts or procedures which can be used by the learner

This kind of learning leads to the development of skills which can be applied now and in future situations. The basic skills of literacy and numeracy fall into this category as do study skills and communication skills. As with the first two categories, there is no expectation that what is learned will be modified in any way by the learner. They will tend simply to be reproduced when circumstances demand. The emphasis in this approach is on practice, so that skills become automatic and the teacher's role is to provide opportunities to allow these skills to be developed.

### Learning as making sense and abstracting meaning

The learner who adopts this approach makes active attempts to understand the material to be learned by penetrating beneath the surface to update and modify existing beliefs and develop a deeper understanding. With this approach, learning is about trying to grasp underlying principles and concepts and it leads to the ability to explain and apply things, not just to remember them. The implication for the teacher is that situations and tasks need to be provided which are more open, which allow for alternatives and which, more fundamentally, recognise that the learner has to be involved in the process.

### Learning as an interpretative process aimed at understanding reality

This final category extends the previous one. By actively relating new understandings to existing beliefs, this kind of learning has the potential to transform a learner's former perspectives and ways of doing things so that they are able to think about things in new and different ways.

Saljo's list is helpful in that it illustrates the varied ways in which learning might be conceived. Each of the above has a place in a learner's repertoire and, by implication, should influence teaching. There are some things that are learned efficiently through rote memorisation. There are some things that are most useful to us when they have been practised enough to have become automatic. To become an effective learner however, it is also important to be given the opportunity to take some control and responsibility for one's learning in order to develop alternative understandings. The ultimate test must be fitness for purpose. When is it most appropriate for something to be learned by rote and when is it best to leave it to the learner to establish, extend or modify his or her own understanding by their own active construction? To answer these questions requires the professional skills and knowledge of the teacher.

Everybody carries with them a theory of learning, no matter how unformed this might be. For teachers, however, it is fundamentally important that they are clear about their own theory of learning, because it has significant implications for how they might organise teaching. Nias (1991) has argued that our values about education and our beliefs about what constitutes good teaching and good learning situations affect the way we work. Most of us hold quite strong views, often without being aware of this.

Over the last century, contrasting theories of learning have been developed and are influential in schools today. The next section explores the most prominent of these.

## What Leaders Need to Know About the Relationship Between Learning and Teaching continued

### Contrasting theories of learning

Bredo (1997) has identified three contrasting theoretical descriptions of learning which have dominated thinking and understanding. He describes these as:

- Behaviourist
- Cognitive (or constructivist)
- Situated (or socio-cultural)

Each of these is described below.

#### Behaviourist learning

In this model the learner is a passive recipient of knowledge and is concerned with the acquisition of knowledge and with memorisation and reproduction. This model is similar to the first two of Saljo's categories. The environment is the determining factor and learning is the conditioned response to external stimuli. Teaching in this model emphasises the accumulation of facts and information and stresses that learning is a cognitive process which uses logical, objective, abstract and sequential thinking. Learners are concerned with how much they can learn. One of the leading advocates of this approach, B.F. Skinner (1954: 94), argued that:

“The whole process of becoming competent in any field must be divided into a very large number of very small steps, and reinforcement must be contingent upon the accomplishment of each step...By making each successive step as small as possible, the frequency of reinforcement can be raised to a maximum, while the possibly aversive consequences of being wrong are reduced to a minimum.”

This model encourages a closed, fixed conception of learning and encourages dependence on the teacher. Learners who experience this approach tend to define themselves in terms of their ability and quickly develop personal perceptions of inability when they are unable to complete something. Carnell and Lodge (2002: 12) argue that:

“The reception (behaviourist) model of learning does not encourage selectivity and judgement about what it is important to know. It does not encourage transfer of learning to different contexts, and it fails to address the learners' understandings of themselves as learners. It is likely to encourage dependence on others to decide what is important rather than develop the ability to learn throughout life. Young people are not encouraged to make connections, apply their knowledge in unforeseen circumstances or see things in different ways. In short, this model does not encourage the kind of learning young people need for their futures.”

An alternative perspective which emphasises greater involvement of the learner is described as 'constructivist'.

#### Constructivist learning

In contrast to past, mechanistic theories of knowledge acquisition associated with behaviourism, we now understand that learning is an active process of mental construction and sense-making (as is emphasised by the third and fourth of Saljo's categories). We have also learned that existing knowledge structures and beliefs work to enable or prevent learning. The central idea of the constructivist model is the importance of the learner's own construction of meaning and understanding. Learning is determined by what goes on in children's heads and with how they make sense of the world. They do this by relating experience to existing organising concepts and principles. These vary with each individual's past experience, so the teacher needs to take account of individual and group differences in order to scaffold or support future learning.

## What Leaders Need to Know About the Relationship Between Learning and Teaching *continued*

The emphasis is less on putting information in and more on expanding existing knowledge to develop new knowledge and understanding. In this model, it is accepted that all students can learn, refuting past beliefs that only the more able can benefit.

The aim in this model is to help learners develop the ability to process, acquire and relate information to their own experience. The learner is encouraged to develop their own judgement about what is important. The model can encourage transfer of learning to different contexts and may help the learner to understand more about being a learner.

In this context, the teacher's role is more of a facilitator, using techniques of discussion, discovery learning and open-ended questioning to support and stimulate progress. The responsibility for learning rests partly with the learner. The learner's ability is not seen as fixed, but capable of development through the support of others, which can include peers as well as teachers. The relationship between teacher and learner is one of expert to novice.

Whilst the social context is important in this model it is emphasised more strongly in the final of Bredo's classification which also stresses the importance of culture.

### **Situated learning (socio-cultural learning)**

This model builds on the principles established for constructivism, but emphasises that learning occurs in a dynamic relationship between the individual and the environment. Learning is not an individual activity but is influenced by the socio-emotional climate and relationships with others. The social context in which learning takes place is crucial. An essential additional feature is the importance of dialogue and the responsibility for learning shifts from individuals to an emphasis on collaboration in the construction of knowledge in what Lave and Wenger (1991) describe as a 'community of practice'. The emotional and dynamic aspects of learning with others in groups is important. We learn with and from others who bring different knowledge, understanding and skill to the learning situation.

According to this model it is essential that learners are involved in the generation of problems and solutions and that they are engaged in activities that can be completed with the assistance of others.

Teaching in this model involves increased use of problem-solving activities and stresses the importance of dialogue between learners, as well as learners and teachers. Dialogue in this context is more than a conversation, Anderson (1999: 68) describes it as a process that:

*"...encourages learners to be active in their learning and to determine its direction. It makes learning more purposeful and self directed. It provides opportunities for learners to think about, to expand, to reconsider, to question, and to understand differently. It promotes an opportunity to develop an awareness of and to develop habits of focusing on, thinking about and tracking their learning"* (Anderson 1999: 68)

Dialogue promotes critical investigation, analysis, interpretation, reflection and reorganisation of knowledge, enabling the learner to review their learning and to relate it to previous experiences and understanding. Intelligent thought involves self-monitoring and an awareness about when and how to use skills. This approach encourages the kind of learning needed for the 21st century. It encourages confidence in dealing with complexity, flexibility and making connections. It encourages people to learn together.

Of the models described above, the most dominant in schools tends to be the behaviourist approach, reinforced through the pressure to cover the curriculum. The culture of schools and the existing beliefs that many of us have about learning are also influential. The behaviourist approach emphasises the accumulation of skills and facts and emphasises performance, usually assessed through a structured testing regime. It is important to remember that performance in tests is not the same as learning. A focus on performance can depress performance, whereas a focus on learning can enhance both learning and performance.

## What Leaders Need to Know About the Relationship Between Learning and Teaching continued

Gipps (1998) suggests that existing assessment processes have a tendency to emphasise surface learning which involves “accepting and reproducing content and ideas” rather than developing learners capable of deep learning who “actively think for themselves and organise their own knowledge”.

One of the most important issues for managers of learning is how to build on the ideas presented here. How do we create classrooms that attend to the requirements of constructivist and situated perspectives?

Brooks and Brooks (1993) have attempted to describe the classroom implications of developing such an approach to learning and assessment. In such classrooms, the pursuit of children’s questions is highly valued. Children are viewed as thinkers with their own emerging theories about the world. Curriculum activities rely heavily on primary sources of data and provide plenty of opportunities for physical and mental manipulation. Teachers seek the students’ points of view in order to understand their current perceptions and conceptions and to see where to take them next. Assessment is interwoven with teaching and occurs through observations of students engaged in the process of learning as well as creating opportunities to display the products of their learning in a wide variety of formats. When appropriate, learning with and from peers is seen as being as important as learning which is controlled and directed by the teacher. The development of children’s capacities as learners and their understanding of learning how to learn is also seen as a significant focus. As Watkins et al (1996) suggest, there needs to be a shift of emphasis from teaching to learning and from teacher responsibility to learner responsibility. In discussions about learning in school, Watkins and his colleagues believe that there has been too much emphasis on the teacher and the teacher’s responsibilities. This has resulted in a focus on teaching rather than learning, and on behaviour management rather than learning management.

In the future, young people need to learn about themselves as learners, how they learn most effectively, what to do when they are not sure how to progress, and how to learn collaboratively. They need opportunities to talk about their learning, to reflect on what helps them learn and what prevents them from learning. As Haynes (2002: 45) suggests:

“...an added layer of thinking can be developed through explicit and deliberate attention to learning processes. As part and parcel of every learning situation, students (can be) encouraged to be aware of their approaches to learning and to engage in discussion and reflection on how they learn. Attention (should be) paid to reviewing the process of learning and considering how these processes may be applied in the future.”

In addition to theoretical perspectives on learning, Dweck (2000) argues that learners’ and teachers’ own beliefs about learning are very powerful and influential. She suggests that our ‘self theories’ describe what we say in our heads about ourselves as learners. She suggests that most people respond to learning tasks in one of two ways, depending on the context, and the influence of social and personal factors. One group holds beliefs which support a ‘mastery’ orientation. This means that learners enjoy learning, seek challenges and persist in the face of obstacles. The other group holds beliefs that prevent them from learning, especially in challenging situations. This group adopts a ‘performance’ orientation and link failure to succeed to their own lack of ability. The more often a learner experiences failure, the greater the likelihood of it being attributed to stable characteristics (such as lack of ability) and as a result it is likely to be expected in future learning.

## What Leaders Need to Know About the Relationship Between Learning and Teaching *continued*

The associated beliefs are described below.

<b>Learning orientation</b>	<b>Performance orientation</b>
Belief that effort leads to success	Belief that ability leads to success
Belief in one's ability to improve and learn	Concern about being judged and the need to perform
Preference for challenging tasks	Preference for tasks within capabilities
Satisfaction from success on difficult tasks	Satisfaction from doing better than others
Emphasis on completing the task, no matter how long it takes	Emphasis on competition and public evaluation
Stresses the importance of developing new problem-solving strategies when facing difficulties	Negative self evaluation when the task is too difficult; blames failure on lack of ability and success on luck

*Adapted from Watkins et al (1996)*

When people come to believe that they are unable to do something, or are no good at certain things, it is this belief that prevents them from learning, rather than any other reason. Learners need to be helped to become aware of their own self theories so that they can change their understanding about ability and the importance of effort, to develop a learning rather than a performance orientation. One way in which an increasing number of schools are helping children to understand themselves as learners is to use the concept of learning style as one of their school improvement strategies.

All of us use a variety of styles and strategies to help us learn, some appear to be relatively stable characteristics and some develop with age. They all directly influence the use we make of any particular learning experience. The same learning experience can have contrasting effects on different learners, even if they are of the same ability. All learners bring something different to the learning situation, which undoubtedly affects their response to what is presented as well as what they gain from the experience. One important benefit of a knowledge of research into learning styles is the challenge it offers to teachers, causing examination of the learning environments provided in classrooms. As Smith (2001: 111) suggests, many teachers may not be aware of their own learning preferences, nor whether they influence their teaching. It is easy to assume that how we make sense of a situation is how someone else does. (For further information about learning styles and their application, see Conner (2002).)

### Implications for leaders

The previous discussion raises a range of important questions for managing learning in a school, a subject or a classroom. In particular:

- What views of learning are held by your colleagues and what effect does this have?
- What views of learning, success and failure are held by the children and how can they be helped to understand their role in these processes?
- What opportunities are provided to talk about learning and to develop a language that allows learners, both teachers and children, to talk about strengths, weaknesses and concerns?
- To what extent are alternative ways of organising learning provided which are adaptable to the different preferences of learners?

## What Leaders Need to Know About the Relationship Between Learning and Teaching continued

- In the context of a centrally directed and controlled curriculum, what opportunities might be created to give learners opportunities to become self-directed and self-evaluative?

As long ago as 1966 Jerome Bruner commented:

“It is somewhat surprising and discouraging how little attention has been paid to the ultimate nature of teaching and school learning in the debates on education that have raged over the past decade. These debates have been so focused on performance and standards that they have mostly overlooked the means by which teachers and pupils alike go about their business in real-life classrooms – how teachers teach and how pupils learn.” (p.86)

It is somewhat depressing that things have not moved forward since this aspiration was expressed. It is hoped that the information presented in this article might contribute to a discussion of the links between teaching and learning in your school and to develop responses to the questions listed above.

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## Teaching, Learning and Becoming

Andrew Pollard

This paper suggests that educational policy in England has become significantly imbalanced and that the emphasis on centrally controlled systems, specifications and targets rests on an outdated 'transmission' model of teaching and learning.

## Introduction

It is argued that the weaknesses of the transmission mind-set are revealed by focusing on learner experience of educational provision and on the nature of pupil learning itself. Indeed the paper suggests that, if policy-makers focused on learners and learning in this way, they would have to really acknowledge the significance of learners' physical, emotional, social and intellectual development as a whole. Further, the necessary understanding of learning as the coherent organisation of subject-related schema in the mind would be complemented by an appreciation of how learners appropriate knowledge and capability within personal and social identities.

Put simply, it is argued that, as well as teaching, curriculum and assessment, we need to consider learning, learners and becoming a person. A real education is achieved by interaction and synergies between these elements – and is far more valuable and enduring than mere performance or shallow indulgence. It is suggested that the most effective school leaders understand the need for balanced educational provision that is grounded in secure evidence concerning learning and teaching.

The paper explores and illustrates this argument with reference to recent research projects. It also offers a model of learning processes through the life-course which is being developed as part of ESRC's Teaching and Learning Research Programme. Practical suggestions following from this approach are offered for classroom teachers and school leaders.

## Key ideas about learning

School education has seen enormous changes in recent decades in response to political imperatives. Although some ambitious targets remain, measured performance standards have significantly improved. Underpinning such successes has been a combination of pressure and support. The former have been provided by national curriculum and assessment structures, procedures for school and teacher accountability, inspection systems and national pedagogic strategies in relation to literacy and numeracy. Recent support has come from enhanced resources and professional consultation, and from bodies such as the General Teaching Council and the National College for School Leadership building on the continuing work of LEAs, TTA, QCA, etc. Additionally though, the discipline of the market still lurks as a way of pressurising schools to improve.

However, it is increasingly apparent that these achievements obscure some significant problems concerning pupil motivation and engagement with learning. Early indications of this were revealed by research on English primary education during the 1990s. The Primary Assessment Curriculum and Experience project (PACE)<sup>1</sup> showed that, as the pressure to perform increased and classroom practices tightened, significant numbers of young children became disengaged or instrumental in their approach to learning. At the same time as performance in the narrow, measured curriculum rose, commitment to enduring life-long learning appeared to be undermined. Short-term gains seemed to be compromising long-term foundations.

A credible explanation for this is that educational policy has become significantly imbalanced. Indeed, some have seen it as having been dominated by an ideological mind-set which prioritises systems, specifications, products and market competition. For myself, I prefer to focus attention on the tacit assumptions about learning which underpin policy and practice. Sadly, despite the scale of the investment in them, these assumptions are hopelessly outdated, amounting to little more than the classic 'transmission model' of teaching and learning. And so the curriculum is specified, teachers trained, classroom delivery prescribed, and pupil, teacher and school performance assessed and inspected.

The weaknesses of this policy mind-set are revealed if, rather than focusing on the delivery of a prescribed curriculum, thinking starts from consideration of the experience of educational provision and the nature of pupil learning itself. If we could persuade policy-makers to do this, they would have to really address seriously the significance of learners' physical, emotional, social and intellectual development as a whole. Further, the necessary focus on learning as the coherent organisation of subject-related schema in the mind would be complemented by an appreciation of how learners appropriate knowledge and capability within personal and social identities. Put simply, as well as teaching, curriculum and testing, we need to consider learning, learners and becoming a person. Education, in the most complete sense, is achieved by interaction and synergies between these elements – and is far more valuable and enduring than mere performance or shallow indulgence. Ironically of course, many learners, parents and teachers do know this in some way.

My own understanding of these issues has evolved through the Identity and Learning Programme (ILP)<sup>2</sup>, in which children were tracked from age 4 to age 16. With Ann Filer, I tried to understand the social influences on pupils as they developed, experienced their schooling and learned. This was attempted in a holistic way, by working very closely with 18 children, their parents and teachers, and by interviewing and observing the young people, their friends and peers, both inside and outside the classroom. From the perspective of individual learners, struggling to make sense of schooling and of their lives, key educational issues sometimes seem somewhat different from those perceived by the school – or by Westminster. This may be seen as a dual struggle, to master new knowledge and skills, and to incorporate these capabilities into personal identity and authentic social practices so that they endure. To illustrate this, let me briefly introduce Hazel, whose picture of her family at a barbecue is reproduced as she drew it at the age of six.



Figure 1: Hazel's family barbecue

It is evident that Hazel had a vivid imagination and considerable artistic skills. She was also very determined and somewhat egocentric at that age. Her school learning in Reception and Year 1 was disappointing and she tended to reject the curriculum tasks offered by her teachers in favour of the richness and independence of her own imaginative worlds. There was little connection between the child and the education system as it was realised in her classrooms. In Year 2 there were three important developments. First, she was taught by a teacher who went out of her way to develop a close relationship with Hazel. The teacher described the result as, "like opening Pandora's Box". Second, Hazel began to be aware of the school progress of her younger sister Beth (placed glumly on the margin of her picture above).

The mix of affection and sibling rivalry which had characterised their home relationship now spurred Hazel's attention to “really, really” try to learn to read. Third, Hazel's parents worked closely with her teacher. They read to Hazel, supported her attempts to read and talked to her about her approach to books. After one bath-time chat about what to do if stuck on a word, she finally began to believe in herself. Her father said, “Well you're good at teaching yourself. You're the best person. You're the one that's learning and picking these things up.” Tucked up in bed and with books around her, Hazel found that this was true. She could work things out, and, moving from concern and support, her parents and teacher then had to manage her pride and enthusiasm. Hazel soon found that a capability at writing followed, and she then had a medium within the core curriculum through which she could express her imagination. In this respect, the system and the person began to be connected, and Hazel was able to realise much of her potential. In later years she was to be particularly successful in GCSE Art (A\*) and English Literature (B). At 'A' level, she studied art, music and drama and was thus, for the first time, able to refine her curricular choices to draw on and reinforce her expressive identity.

Sadly, there were no similar developments in mathematics. Whilst some children flourished within the methodical structure of the primary school's scheme, from Hazel's perspective, it provided only drudgery. Hazel began to form a strong friendship with Harriet, sharing similar perspectives, independence and sense of humour. By the age of 11, their culture was distinct, their self-confidence had developed and their individual identities were assured as they moved into secondary education. However, mathematics still did not seem to resonate within the girls' culture and, at 16, although Hazel succeeded in a total of seven GCSEs, she did not pass in maths.

Factors such as the schools' curriculum plans, Hazel's examination skills, her teachers subject knowledge and pedagogic skill, Ofsted findings and the market position of the schools are all relevant to this story. But they are wholly inadequate as a way of understanding what was going on as Hazel learned and developed as a person.

Amongst additional, key factors are those which are social and emotional and concerned with learning processes. Indeed, the key moment selected for illustration from Hazel's story shows parents and teachers working together with great sensitivity and interpersonal awareness to shape her thinking and extend her understanding. It also offered a glimpse of the ways in which she made sense of her learning and began to fulfil herself and reinforce her identity through a particular form of gendered peer culture.

The story of how Hazel initially engaged with basic literacy and numeracy skills thus focuses attention on a formative period in the development of her identity as a life-long learner. In literacy and the expressive arts, a sense of mastery was achieved. This was both personally fulfilling and socially supported. In mathematics she remained dependent, uncertain and insecure. Peer culture condoned her lack of serious engagement, and an established, gendered pattern was thus reinforced.

Such narratives reflect the life-long struggle of all of us to make sense, adapt and find fulfilment through learning, and this itself can be seen in terms of a continuous, spiralling process in which four key questions, each with associated factors, are repeatedly faced.

- Who is learning? (identity, significant others, genetic potential, cultural, linguistic and material resources)
- What is to be learned? (social relationships and strategies as well as knowledge and skills)
- How supportive is the learning context? (affective support as well as cognitive instruction)
- What are the outcomes? (self-esteem and social status as well as formal attainments)

From this perspective, the education of each school pupil should be seen in terms of becoming a person as well as in relation to receiving the prescribed curriculum. Their capacity to appropriate knowledge, to make it their own, should be seen as being as significant as their ability to perform in tests.

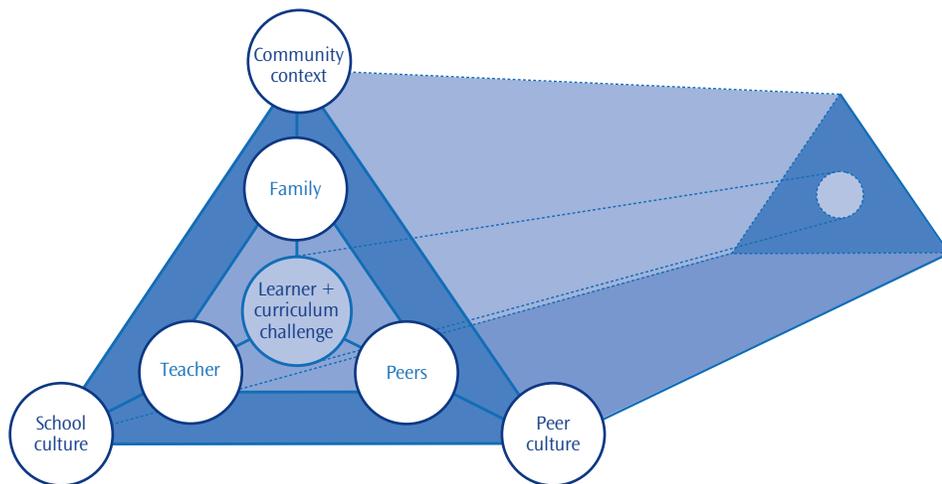


Figure 2: Social influences during schooling in relation to lifelong learning

As Figure 2 indicates, the social context of learning is crucial in this. At its most positive, it affords practical support from significant others and offers wider forms of cultural meaning and resource. At worst, such support is not available or is even anti-educational, with tragic effects on learning outcomes, career trajectories and life chances. Indeed, we must always remember that, although schooling has particular responsibility for the foundations of life-long learning, it contributes to only a part of the life course.

### Implications for teachers and teaching

Teachers must survive in the contexts in which they find themselves, and the pressures of today are considerable. Targets also continue to beckon, and it is tempting to simply turn up the pressure once again. My view is that this would be a mistake. Whether policy-makers really understand it or not, the only way to enhance and sustain standards in the long term is to work with the flow of learner motivation and development. To do this, I recommend the following for classroom practitioners:

- Approach your teaching and assessment of subject knowledge thoughtfully. Try to draw on pupil experiences so that they can relate curriculum requirements to existing frameworks of understanding, to established identities and to available cultural resources.
- Provide a rich, diverse and balanced curriculum. Try to offer opportunities so that all the children can experience some form of success in your classroom. Build on and broaden these successes and thus bolster their identities as learners.
- Support thinking about learning how to learn, as well as curriculum content. Try to develop children's thinking and other metacognitive skills authentically. Relate these to general learning capacities and build confidence in 'giving things a go' and learning from the experience.
- Understand the cultural influences on children and the significant others in their lives. Try to develop good relationships and partnerships with parents and tap into peer group or youth cultures where this could help with learner engagement.
- Develop your own capabilities as a reflective practitioner. Try collecting some evidence to monitor both your practices and the pupils' responses (see reflective teaching resources<sup>3</sup> for ideas on this).

### Lessons for school leaders

School leaders are positioned, somewhat exposed, between national requirements and local circumstances. Whilst there may be some agreement that much educational policy is based on an inadequate conception of learning, such knowledge does not necessarily help in meeting immediate demands. However, it does seem to be the case that, having allowed for intake factors, sustained year-on-year performance occurs only when school leadership teams draw, one way or another, on principled and secure models of teaching and learning. Often these have been built up through experience, study, belief and consultation. At their best, they are also supported by research evidence. Five specific suggestions for school leaders are thus as follows:

- Develop and promote explicit understandings and value commitments in relation to provision of a rounded education and holistic learner experiences. Articulate a principled rationale in terms of a mutually beneficial interaction of development and long-term identity, instruction and short-term performance.
- Foster a strongly positive learning culture within your school. Encourage your teachers and other staff to work with the flow of learner development. From time to time, try to step outside day-to-day pressures to directly consider learning processes in your school from diverse learner perspectives. Support the learning and professional development needs of your staff through appropriate forms of reflective practice.
- Consider ways in which social, cultural and emotional aspects of children's circumstances and biographies could be recognised and built upon within school practices. For example, there may be roles for parents and the community; a place for formative, longitudinal records of pupil achievements and lives as learners; a role for authentic consultation with pupils about important issues and challenges.

- Whilst maintaining continuity with core principles of teaching and learning, lead your school community in the development of innovative provision and practices in response to changing needs and circumstances.
- Evaluate and actively mediate externally generated pressures and fashions so that the stability and balance of your school is sustained. Be prepared to take a lead in protecting your school community, its values, principles and practices.

Of course, none of this is at all easy. However, there is now provision for much more sharing of professional and evidence-based knowledge across the UK, facilitated, for example, by NCSL and other government agencies. It is now reasonable to expect the judgements of school leaders to be at least informed by evidence. The Teaching and Learning Research Programme<sup>4</sup> ([www.tlrp.org.uk](http://www.tlrp.org.uk)) is making a significant contribution here and its website is worth monitoring for findings from its many projects. Over the next few years, TLRP's life course work will produce further understanding on the interface of development, experience, curriculum, pedagogy and assessment. Its scale, range and strong engagement with policy-maker and practitioner users promises significant impact. In particular, it is hoped that that it will support the development of cross-sectoral, life-long educational policies based on high quality evidence and sophisticated understanding of learning and teaching.

### Some synoptic questions

- What are the major factors that affect the learning of the children attending your school? As well as thinking of your pupils, you could also interrogate your answer by relating the question to your personal learning or, if appropriate, to that of your own children.
- What teaching strategies and practices do you think would be particularly effective in enhancing both life-long learning and short-term performance in your school?
- How could you provide strategic leadership in enhancing teaching practices and school processes to enhance learning outcomes for all your pupils?

### Notes

- 1 There are two PACE books of particular significance to this argument – *Changing English Primary Schools* (Pollard et al, 1994) and *What Pupils Say: Changing Policy and Practice in English Primary Schools* (Pollard and Triggs, 2000). These books are published by Continuum, London. *Readings for Reflective Teaching* (see below) provides key excerpts.
- 2 ILP has produced three books so far. *The Social World of Children's Learning* (Pollard with Filer, 1996), *The Social World of Pupil Career* (Pollard and Filer, 1999) and *The Social World of Pupil Assessment* (Filer and Pollard, 2000). A fourth book, *Learning Differently: The Social World of Secondary Education* (Pollard and Filer) will be published in 2004. They are all published by Continuum. *Readings for Reflective Teaching* (see below) again provides key excerpts.
- 3 Practical resources to support reflective, evidence-informed professionalism include *Reflective Teaching*, *Readings for Reflective Teaching* (Continuum) and [www.rtweb.info](http://www.rtweb.info) They are produced by Andrew Pollard with the assistance of an editorial team. *Readings for Reflective Teaching* offers 120 accessible selections from both classic and contemporary research findings.
- 4 With some 30 projects and almost £27m of UK funding, TLRP is a very large programme of co-ordinated educational research. Projects span the life course and are all dedicated to investigating how learning outcomes can be enhanced. There is very strong engagement of research users at all stages of the research and a commitment to supporting the development of UK capacity in conducting educational research. TLRP newsletters are distributed to all schools and many other institutions every six months or so. Full details of activities and findings are available on the programme website: [www.tlrp.org](http://www.tlrp.org)

# Learning and Leading

Chris Watkins<sup>1</sup>

## Learning and Leading

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### Are we talking about learning?

The term 'leading learning' is heard frequently, but as with uses of the term 'learning' it may hide many meanings, often unexamined yet often questionable. Many current uses of the term learning are not about learning at all, and those who intend to lead learning will be better placed if it really is learning they are talking about. Three major themes hijack discussions about learning: teaching, performance and work.

Phrases such as 'teaching and learning policies' and 'teaching and learning strategies' are often used, but they might better read 'teaching and teaching', since the real attention given to learning is minimal. This applies to an increasing number of publications and initiatives: *Learning Journey* (DfES, 2002) describes at length subjects and tests (ie what is now known as curriculum) but does not mention learning. *Transforming Learning* (Hay McBer, 2001) has a catchy title, but actually focuses on improving teacher–pupil communication about classrooms. Many texts on accelerated learning are predominantly teaching practices, which may be of value but do not focus on the process of learning.

Performance is not learning, though it may develop from learning. Politicians and policy-makers currently choose to limit their focus to tangible and measurable outcomes: performance tables, performance pay, performance management. With this focus comes pressure to perform better. A major risk is that teachers under pressure just pass pressure on to pupils: we've been given targets so I'm going to give you targets. Many research studies demonstrate that a focus on performance can depress performance – whereas a focus on learning can enhance performance<sup>2</sup>.

'Work' is the dominant discourse of classroom life: 'get on with your work', 'homework', 'schemes of work', 'have you finished your work?'. At worst it can lead to work for work's sake, without considering the learning quality or engagement. Interestingly, this particular distortion is relatively easy to challenge – and productive energy is released as a result.

When teachers agree with their classes that every time they seem about to use the word 'work', they will try the word 'learning' instead, electric results are often reported.

### Which version of learning are we talking about – and leading?

On those occasions when we do manage to put on one side the discourses which divert our focus from learning, we meet another issue which is crucial: there are different conceptions of learning, each of which carries different assumptions and implications.

#### 1. Instruction

The most dominant conception of learning relates quickly back to teaching. When asking people about their learning experiences, they mostly report occasions of being taught, and focus on what the teacher (or equivalent person) did. This reflects deep-seated cultural beliefs about learning and teaching<sup>3</sup>:

- teaching is telling
- learning is listening
- knowledge is subject matter taught by teachers and found in books

A further belief associated with this view is that learners acquire new knowledge in predictable and manageable stages. This belief purports to offer a clear specification of just what it is that is to be learned and, equally questionable, it suggests standards for assessing its achievement. More than any other discourse about learning, this one has spawned objectives and testing in their many guises<sup>4</sup>. In recent decades this conception has been made more dominant by policy-makers with short timescales, curriculum prescriptions of the style seen in the English national curriculum “Pupils will be taught that ...”, and so on.

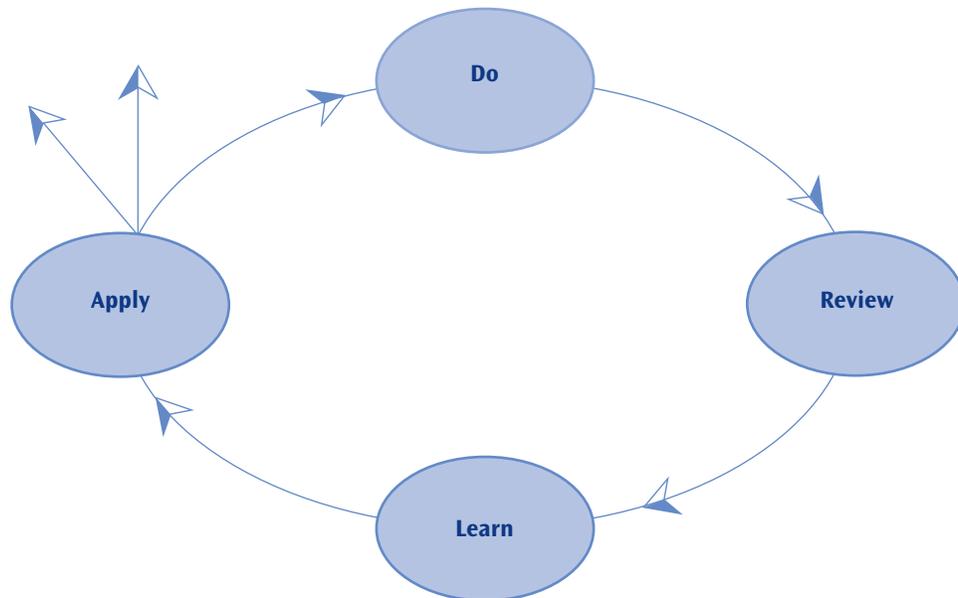
The hazard which is associated with the instruction view is that of leaving the learner out of the picture, or of viewing them as passive recipients, and of viewing teaching as transmission. If teaching is telling then it follows that teachers are centrally responsible for learners’ performance: this is shown to generate more controlling behaviour on the part of teachers<sup>5</sup>.

Leaders who see learning from this perspective are likely to:

- focus on teachers more than learners, especially their knowledge and competences
- view the process of curriculum as one of delivering a body of knowledge
- value tangible products which are deemed to be easily measurable
- favour modes of assessment which are timed, summative performances, often through paper and pencil methods
- seek to improve performance by accelerating the pace at which learners get “it” into their heads
- drive improvement through measurable indicators of product
- talk about learning in ways that conflate learning with teaching and performance
- de-emphasise the social dimensions and social outcomes of learning

**2. Construction**

Research of the past three decades has brought attention to the processes of the learner in making sense of their experiences, relating them to past experiences and taking learning forward into their future. This view embraces the idea that the learner brings to any new experience their existing understandings and conceptions, so that learning is a process of adaptation based on and constantly modified by their experience of the world. The focus on the individual learner highlights how he or she approaches learning and engages in his or her own sense-making. In this view knowledge is constructed (even when another is transmitting), and the role of anyone helping (teaching) is examined in terms of how it helps the learner make their own sense. The process of learning from experience is often modelled in a cycle:

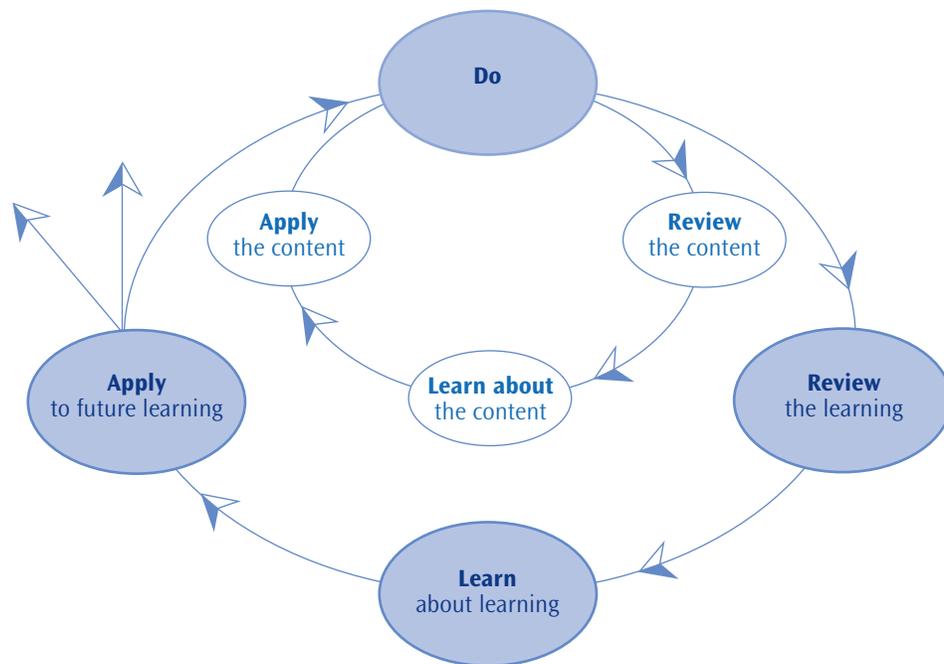


This highlights an active process, influenced by the use learning is put to. How the learning informs action in future situations is vital. Many studies of learners' approaches to achievement-related activities find two orientations, which many teachers recognise – in their pupils and in themselves.

Learning orientation	Performance orientation
Belief that effort can generate success	Belief that ability leads to success
Belief in one's ability to improve	Concern to be judged as able, to perform and learn
Preference for challenging tasks	Satisfaction from doing better than others
Emphasis on personal definition	Emphasis on competition public evaluation of success at difficult tasks
Problem-solving and self-instruction when engaged in task	Helplessness: evaluate self negatively when task is difficult
Concern for <i>improving</i> one's competence	Concern for <i>proving</i> one's competence

The performance orientation<sup>6</sup> is associated with negative effects for learners: they are more likely to say "I'm no good at X", they seek help less, use fewer strategies and less effective strategies, show a greater focus on marks and grades – and they display worse performance.

The learning orientation is shown by learners offering rich commentaries on their processes as they are engaged in them. Such learners have come to plan, monitor, reflect on and understand the individual and social processes necessary to be effective learners. This is not just acquisition of particular strategies, but the monitoring and reviewing of learning to see whether strategies are effective<sup>7</sup>. This has been described as ‘metalearning’ or learning about learning, and effective learning includes this extra crucial ingredient. It is supported through a cumulative process of noticing aspects of learning, developing conversations about learning, reflecting on learning, making learning an object of learning. This can be modelled as an extra cycle.



The purpose here is to enrich the learner’s view of learning (not the learner’s categorisation of themselves as a learner) Metalearning promotes the versatile learner. A hazard sometimes associated with the construction view is that it may focus on the individual rather than the social processes in which a learner is engaged: in that most complex social environment, the classroom, this point is vital.

Leaders who see learning from this perspective are likely to:

- focus on the way people make sense of their experiences
- view curriculum as addressing thought-demanding questions
- value processes which make learning a visible, central element: making reasoning public, thinking aloud together
- favour modes of assessment which ask people to explain to one another, give a reflective commentary
- seek to improve learning by slowing down the pace and focusing on quality of thinking
- drive improvement through indicators of quality learning experiences
- talk publicly about learning, and promote inquiry into learning
- support learning exchanges and peer teaching
- promote people known as learners<sup>8</sup>
- ask of every policy and every procedure: “What do we learn from this?”
- encourage others to do the above

### 3. Co-construction

The third stance on learning recognises that human behaviour is necessarily social. The crucial role of language and dialogue in the creation and negotiation of shared meaning is emphasised. Culture is considered, since humans are surrounded by the cultural objects in which meaning has been vested by previous generations. In this view, knowledge is constructed socially rather than individually. It is not in books (the idea being to get it from there into heads), knowledge is in what people create when they go to those books. Similarly it is not in heads (the idea being to get it from brainy heads), knowledge is in what people create when they get their heads together<sup>9</sup>. Action is crucial: when people are doing things together, knowledge is created and recreated in their discourse. Context is crucial: studies of learning out of school highlight the potency of viewing people as a knowledge-creating organisation, especially for fast-moving industries in what has become characterised as a ‘knowledge explosion’.

Nevertheless this view also highlights how traditional bodies of knowledge are constructed and maintained, largely through the ongoing communications of a community which has proposed ways of agreeing, even though different views remain.

For the teacher this view focuses attention on the processes by which learning communities are built. For example, in a classroom participants work to create new and shared knowledge on an agreed topic through collaborative argumentation and knowledge-testing. This resembles authentic and generative learning in the domain under study<sup>10</sup>. Teaching strives to create conditions for learner participation: supporting a learner helps them grasp the whole system to be learned, rather than reducing it to components for bottom-up acquisition.

The co-construction stance moves us from viewing learning as an individual acquisition, whatever the commodity to be acquired, to viewing learning as also becoming part of a community<sup>11</sup>. A hazard of this view would be to focus solely on social processes to the point of excluding individual ones.

Leaders who see learning from this perspective are likely to:

- focus on social and collaborative processes in teams and classes
- view curriculum as a process of building and testing knowledge
- view learning as a process of action and dialogue that leads to improvement in knowledge
- value processes which enhance collaborative and community outcomes
- favour modes of assessment that provide a community product
- seek to improve learning by enhancing collaborative enquiry and dialogue
- orchestrate improvement through indicators of the learning culture
- talk about learning as a distributed process of building knowledge, so that all can be involved<sup>13</sup>
- talk about leadership as a distributed process of building culture, so that all can be involved<sup>14</sup>
- ensure fluid organisation, spanning boundaries

### Looking to the future

Educational practice is always a mixture and a collection of tensions. It doubtless reflects elements of all three perspectives on learning, but the policy climate of the last two decades has been relentlessly of the first type, which is increasingly out-of-step with learning outside school, and with the changing world<sup>15</sup>. The result has been that many of the teaching profession are now risk-averse to a focus on learning, and engaged in defensive teaching<sup>16</sup>.

## Learning and Leading continued

A recent study<sup>17</sup> presents six possible scenarios for school systems over the next 10-20 years. They are surprisingly self-explanatory:

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### The status quo extrapolated

- 1: Robust bureaucratic school systems
- 2: Extending the market model

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### The 're-schooling' scenarios

- 3: Schools as core social centres
- 4: Schools as focused learning organisations

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### The 'de-schooling' scenarios

- 5: Learner networks and the network society
- 6: Teacher exodus – 'meltdown'

If those who lead learning are to contribute to schools as vital learning communities, they might be guided by two key questions:

- Have I really been leading through advancing the culture of learning, or through something else?
- Have I and others together been developing a more effective learning community?

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# Consulting Pupils about Teaching and Learning

Jean Ruddock

## Consulting Pupils about Teaching and Learning

### A perspective on learning

Pupils have a lot to tell us about learning and teaching. They are our ‘expert witnesses’. From their first days in school they are busy figuring out how the system works and learning to adapt to different situations and teaching styles. They know a lot about the regimes of schooling but their insights are often used strategically to avoid the hard work of learning – in ways that can contribute, cumulatively, to their own under-achievement. Our concern is to find ways of harnessing their insights in ways that will support their learning and strengthen their sense of membership of the school as a learning community.

Of course, teachers are constantly consulting their pupils about their learning, asking whether they have understood the task, whether they are finding the work difficult, whether they want the teacher to repeat something. But in the present climate there is considerable support for going beyond the teacher’s regular monitoring of pupils’ understanding and progress. Many teachers are concerned that young people should experience autonomy and learn to manage responsibility in school so that they leave with perspectives and capabilities that will stand them in good stead beyond school. Such an aspiration is central to citizenship education and it is supported by the 1989 United Nations Convention on the Rights of the Child which argued that all young people, if they are capable of so doing, should have the opportunity to express an opinion on matters that affect their lives.

But not all pupils feel able to comment openly if they are unhappy about some aspect of teaching or about the way some individuals or groups in the class behave or are treated. Indeed, there are probably many silent or silenced voices in our classrooms – pupils who would like to say things about teaching and learning but who don’t feel able to do so without a framework that legitimates comment. This pupil voices a concern that appears to be widespread:

“Sometimes I wish I could sit down with one of my teachers and just tell them what I exactly think about their class. It might be good, it might be bad, it’s just that you don’t have the opportunity to do it.” (Webb, 2001, p1)

### The case for extended consultation and participation

Most of us would probably agree with Nieto who said that “educating students today is a far different and more complex proposition than it has been in the past”. They are the first generation “to have experienced from infancy the ‘computerization of society’” (Kenway and Bullen). They have a significant niche in the market, are courted by advertisers and have considerable opportunity, outside school, for making choices about their lifestyle (ibid). Many are involved in complex relationships and situations, both within the peer group and the family and they may be carrying tough responsibilities. In contrast, schools offer less challenge, responsibility and autonomy. We need a better fit between schools and young people and a more accomplished way of recognising and harnessing their capabilities.

Extending opportunities for consultation and participation is an effective way of recognising pupils’ capabilities and of reducing the alienation that some students feel in settings where their social maturity and their desire for greater autonomy and intellectual challenge and support are not recognised. Indeed, Sammons et al (1994) and Gray et al (1999), drawing on correlational analyses of school effectiveness studies, have suggested that schools achieving more rapid progress are those which “had actively sought out pupils’ views as well as giving them more prominent roles” in school.

## Consulting Pupils about Teaching and Learning continued

It is not easy to change our perception of pupils: we are battling not only with the legacy of the past, which constrains our view of what schools and young people might be, but with a set of powerful contemporary contradictions: on the one hand, policy initiatives that limit the possibilities for change by defining achievement narrowly and by keeping teachers on a tight rein, and on the other hand, widespread support for pupil voice with its essentially transformative potential.

### What are the benefits for pupils, teachers and schools?

Some teachers and schools are motivated to consult pupils by concern about school improvement, others by the potential for the empowerment of pupils. We think that these are complementary rather than competing aspirations in that pupils who feel more positive about learning and about themselves as learners are more likely to work hard and do well.

This is a summary of what pupils and teachers say they can gain from greater opportunities for consultation and participation:

#### **Pupils can gain:**

- a stronger sense of membership so that they feel positive about school
- a stronger sense of respect and self worth so that they feel positive about themselves
- a stronger sense of self-as-learner so that they are better able to manage their own progress in learning
- a stronger sense of agency so that they see it as worthwhile becoming involved in school matters and contributing to the improvement of teaching and learning

#### **We also have evidence of:**

- more positive attitudes to learning
- more positive perceptions of teachers
- a readiness to look at things from the teacher's perspective
- a developing capacity to talk about teaching as well as learning

#### **Teachers can gain:**

- a more open perception of young people's capabilities
- the capacity to see the familiar from a different angle
- a readiness to change thinking and practice in the light of these perceptions
- a renewed sense of excitement in teaching

#### **Schools appear to gain:**

- a practical agenda for change that has student backing
- a more inclusive culture, with student input at various levels
- the development of the idea of a pupil-teacher partnership in learning

## Consulting Pupils about Teaching and Learning continued

### What does this mean for teachers' practices?

Extensive discussions with pupils, of different ages and in different school settings, about what helps them to learn and what gets in the way of their learning suggest that it is not just the quality of teaching that matters but also the conditions of learning in schools, including the messages that pupils receive about what and who the school values.

Key themes in the interviews were the importance of:

- respect and fairness
- security
- challenge and support
- responsibility and autonomy

Security is not just about the safety of persons and property but is also about freedom from the threat of being publicly humiliated by teachers or by peers. Autonomy includes increasing recognition of young people's social maturity as they move up through school and their desire to be increasingly treated like adults. Responsibility includes being trusted to help others with their learning and knowing how to manage their own progress in learning.

Building a climate and community in which these 'conditions of learning' are valued and enacted on a daily basis will be, for many schools, a tough challenge and not one that all leaders and teachers will want to invest precious time in but the outcomes for pupils and for teachers may be worth the effort.

Obvious building blocks include:

- circle time, as an inclusive way of legitimising talking and listening to each other from early on in pupils' school careers
- student councils where attention is given to ensuring that all pupils feel that their views are canvassed and represented and where they are informed of the outcomes of their representations
- student working groups set up to explore a particular problem or idea and to report back with recommendations for action
- message boxes, where pupils can post comments on their experiences in school, year group or class, and make suggestions
- referenda on occasional events or key decisions for the school, year group or class

In addition, within lessons where a more regular pattern of consultation can usefully supplement the teacher's everyday monitoring of pupils' understanding and progress, the following strategies have proved useful:

- completing a form, which individuals could use when they chose or which a whole class could complete in relation to a particular lesson or task; the form invites responses to three simple questions:
  - Was there anything you found really difficult?
  - Is there anything you would like help with?
  - Any suggestions for making the lesson better for you?

## Consulting Pupils about Teaching and Learning continued

- inviting pupils to fill in a log book, for a limited period, in which they record, each day, only those things that really excited them in lessons or where they think they really learned something
- offering a group of pupils, where there is a particular problem (with the completion of homework, for instance) the task of conducting an inquiry and feeding back the information for discussion with the teacher and the whole group

These are very straightforward approaches. What matters is that:

- they are not over-used so that they become monotonous ('Oh, no - they want our opinions again')
- a climate has been developed in which pupils feel comfortable making their views known, especially if they are acknowledging that they are having difficulty in learning or want the teacher to change his or her approach

In some circumstances, such as the development of a student council, pupils' understanding of what is possible is limited and it has proved helpful to take them to visit other schools where the council is well developed and to report back on ideas that they think might work in their own school.

### Tasks for leaders

The education literature, say Apple and Beane, "is filled with romantic portrayals of easy victories in the struggle to reform our schools," but we have to stop believing in the myth of the quick turn-around. It takes time for teachers and students to learn to work together to build a climate in which they feel comfortable in managing a constructive review of teaching and learning in their schools. The commitment and support of school leaders is crucial.

As Corson (1992, p.249) has said:

"For (new) values to count they need to be inserted into the discourse of the place; they need to be articulated sincerely by significant figures in the organisation so that they become part of the taken-for-grantedness of the place."

In relation to enhanced pupil consultation, the key tasks for leaders would include:

- re-assuring staff, parents and governors that consulting pupils is recognised nationally as a legitimate practice that supports the development of citizenship education
- building up support among staff (who may be sceptical) by presenting evidence of the positive outcomes of consultation
- being sensitive to the anxiety experienced by teachers who have not before consulted pupils about teaching and learning
- ensuring that other school policies and initiatives are in harmony with the values that underpin pupil consultation
- ensuring that various important areas of school life offer opportunities for pupils' voices to be heard and that consultation is not confined to the school council

Overall, leaders need to ensure that the core principles of enhanced consultation are taken seriously:

- that the desire to hear what young people have to say is genuine
- that the focus of consultation is seen as worthwhile by the pupils
- that the purpose of the consultation is explained to the young people

## Consulting Pupils about Teaching and Learning continued

- that young people are confident that expressing a sincerely held opinion, or describing a feeling or an experience, will not disadvantage them
- that feedback is offered to those who have been consulted
- that action taken is explained and where necessary justified so that young people understand the wider context of concerns, alongside their own input, that shape decisions in the school or classroom

If and when the going gets tough, it is worth remembering something Hodgkin said (1998, p.11):

“The fact is that pupils themselves have a huge potential contribution to make, not as passive objects but as active players in the education system. Any (policy) concerning school standards will be seriously weakened if it fails to recognise the importance of that contribution.”

### Some questions

- Do you know where in your school pupils are being consulted? Is it about their learning in particular subjects, about teaching and learning, or about school-wide issues?
- Where are the formalised opportunities for pupil voices to be heard? If through a year or school council, what do pupils not involved as representatives think of the system for representing their views? Is feedback offered to pupils about what recommendations were pursued and why?

- If your school has not yet examined the potential of involving pupils more closely in school matters, and if you feel that this would be a worthwhile thing to do, what, given your knowledge of the current ethos and staff-pupil relationships, would be the best place and the best way to start?
- Are the qualities and skills that consultation and participation can help develop in young people ones that the school values alongside academic achievements?

The source of the ideas in this document is the ESRC/TLRP Project, Consulting Pupils about Teaching and Learning (2000-2003).

The project team included: Madeleine Arnot, Sara Bragg, Nick Brown, Helen Demetriou, Nichola Daily (Project Secretary), Michael Fielding, Julia Flutter, John MacBeath, Kate Myers, David Pedder, Diane Reay, Jean Rudduck (Project Co-ordinator) and Beth Wang. More information is available from: [www.consultingpupils.co.uk](http://www.consultingpupils.co.uk)

In summer/autumn 2003 a set of materials for teachers – three A4 collections and a book – was published by Pearsons. The A4 collections are: *Ways of Consulting Pupils*, *Building a Whole School Commitment*, and *Students As Researchers*. The book reports the work of two classroom-based studies which focused on what pupils can tell us about the pedagogic and social conditions of learning.

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# Teaching to Learn, Learning to Think

Maurice Galton

## Teaching to Learn, Learning to Think

### Abstract

Recent attempts to improve the quality of teaching and thereby drive up standards have emphasised the importance of classroom practice being evidence-based. As a result, some educationalists have advanced the idea of teaching as a science, arguing for a unifying model of pedagogy that suits all purposes and meets all circumstances. The purpose of the following article is to suggest an alternative approach in which specific models of teaching, based on particular ideas about learning, are selected according to the knowledge demands of the selected task. Such models, however, merely constitute general guidelines that have to be interpreted creatively by teachers to meet the conditions pertaining in their classroom at a particular moment in time. In this sense it is more appropriate to talk about a science of the art of teaching.

The adoption of a three part lesson as the core of the Key Stage 2 Literacy and Numeracy strategies, now extended into Key Stage 3, represents the latest thinking about evidence-based practice. Advocates talk about a science of teaching where there is a consistency of approach under a variety of conditions and for a variety of purposes.

This evidence-base approach tends to assume one model of learning, in the same way that many educationalists in the sixties argued the merits of either child- or teacher-centered approaches but not both. I am puzzled by this continued search for some grand theory of teaching and learning that covers every circumstance when practitioners of older disciplines tend to adopt a more pragmatic attitude. In science, for example, while those operating at the frontiers of the discipline are striving towards the establishment of some all embracing theory of matter, everyday practitioners are content to use working theories which in some instances regard matter as particles while in others it is treated as waves. In education, more effective practice might result if we could identify specific models of learning that suit particular teaching objectives rather than arguing for dominant use of a particular method of teaching based on behaviourism, constructivism or whatever.

Bruce Joyce and colleagues (1997) have undertaken one attempt at this working theory approach but here I wish to narrow the range of possibilities to make the approach more manageable. I want to take three views of learning as information processing, social constructivism and development of expertise, and use them to derive appropriate teaching models. I have chosen these three theoretical standpoints because they each focus on three crucial aspects of knowledge acquisition.

### The uses of direct instruction

Research tells us that the main pattern of classroom discourse consists of what has been termed direct instruction. This involves a review of what was previously taught, by engaging pupils in a rapid question and answer session. The teacher then introduces new knowledge and works through some examples with the whole class before setting practice assignments, which pupils work at individually. Numerous studies show that direct instruction is most appropriate when the objective of the lesson is to teach explicit procedures, explicit concepts or a body of knowledge. In particular, direct instruction works best when the objective is to teach English grammar, vocabulary, simple mathematical or scientific concepts etc. However, more challenging tasks such as solving complex mathematical problems, writing creatively or testing hypotheses all need a different approach.

### Classroom discourse as an aid to understanding

All these latter activities involve knowledge of ideas and an understanding of certain principles. As we develop conceptual understanding, we learn to classify and process information more efficiently, but an important part of this understanding is the increase in our knowledge about language and its uses. As our ability to communicate improves we clarify our understanding by constructing (and reconstructing) our ideas through talk with others.

## Teaching to Learn, Learning to Think continued

In the classroom these conversations usually (but not exclusively) take place either with the teacher during a class discussion, or with peers during collaborative group work.

There are three key parts to this social constructivist process:

1. Using open-ended questions
2. Allowing suitable wait time
3. Encouraging explanations or elaboration of answers

Findings on the use of open questioning are not encouraging. Observational studies (Galton et al 1999) offer evidence that the situation appears to have remained unchanged over at least two decades of primary teaching. More recently others such as Hardman et al (2001 p.48) have investigated the nature of discourse taking place during the literacy hour. Despite the differences in methodology, their ratio of closed to open questions at Key Stage 2 is of a similar order to earlier studies. Even fewer open questions are asked in Key Stage 1 classrooms.

Edwards and Mercer (1987) offer reasons for such patterns. Much class discussion consists of a sequence of what these researchers call 'cued elicitation' whereby when the teacher asks a question he or she simultaneously provides heavy clues as to the information required. Thus many open questions end up becoming closed in that pupils come to accept that, although the question allows for many answers there is only one which the teacher really wants from them. Most teachers' open questions are combined with heavy prompts, clues and cues so that, in reality, the approach does not differ from direct instruction.

Hence the importance of allowing suitable wait times. The first of these consists of the time the pupil is given to respond before the teacher either repeats the question or seeks an answer from someone else.

The second is the time a pupil is allowed for elaboration after his or her initial answer, before the teacher either paraphrases the pupil's response or offers further cued elicitation. A review of numerous studies shows that in both cases wait times of less than three seconds (said to be the critical minimum value) are the norm and that the second wait time is perhaps more crucial when attempting to teach for understanding rather than transmission.

### Pupils as independent learners

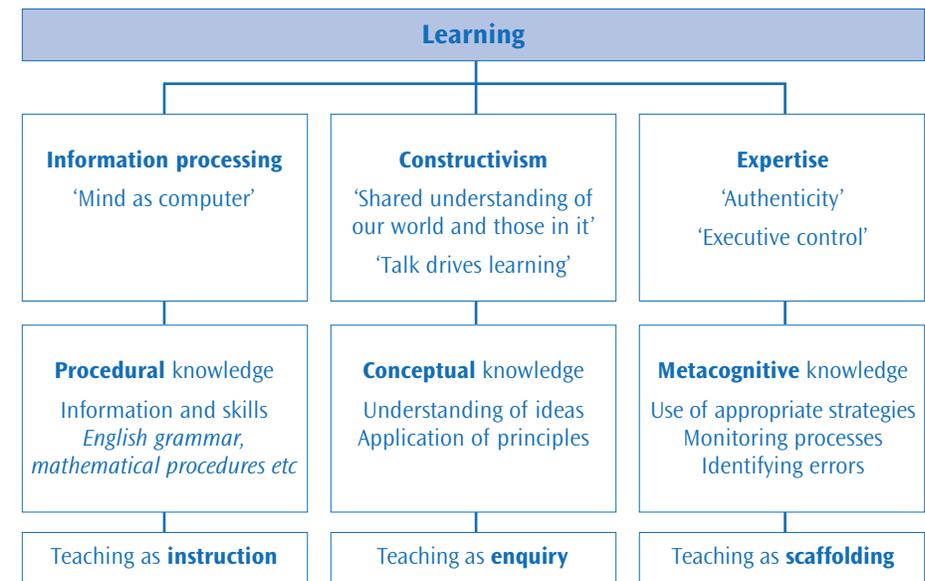
In the course of discussion leading to the development of conceptual understanding, pupils also learn the rules which govern these conversations. This allows them to determine what it is legitimate to say in any given domain and what breaks the rule. Over time, through practice, this process becomes automatic so that we can switch conversational modes according to circumstances. As pupils reach this stage of development they also begin to monitor their own learning by recognising and correcting errors. They are able, therefore, to self-regulate their thinking, particularly during problem-solving, and as such, learn how to become 'metacognitively wise'.

Experts, by definition, have developed these metacognitive skills to a high degree in their chosen area. Growing expertise involves a shift from a transitional mode during which learning becomes increasingly self-controlled, self-monitored and self-reinforced. In the transitional mode we solve problems by going through a repertoire of possible solutions that we have been taught. In mathematics, for example, in solving an algebraic equation we, typically, might try various standard substitutions until we establish the relationship between one variable and another. Expert mathematicians operate differently. Partly through experience and partly by inspiration they are able to recognise the particular equation as part of a general class of problems and apply an appropriate strategy for effecting a solution. They also have a capacity known as executive control whereby they can quickly decide whether the chosen strategy is likely to yield effective results.

That is why expert chess Grand Masters can compete with computers. The latter, unlike the human mind, because of their vast processing power, can continue to operate in the transitional mode by rehearsing the consequences of a vast repertoire of possible moves within the allocated time limit in selecting the probable best solution.

### Becoming an expert learner

Research on highly skilled performers in various fields tells us about ways in which pupils can best develop this expertise as problem-solvers. In the initial stages, when pupils may lack confidence in their capacity to succeed, it is important that teachers provide a framework (or scaffold) in which children can experiment. Most teachers attempt to do this through a process of guided discovery but Rosenshine et al (1996) have examined the effectiveness of using different types of scaffold and come to the conclusion that there are other ways that help reduce the pupils' dependency upon the teacher. These include having pupils recall the steps in their thinking when arriving at a solution to a problem (rehearsal), providing cue (or prompt) cards, and providing evaluative check lists for pupils to assess the effectiveness of their chosen thinking strategy. Pupils must also come up with suggestions as to what could be done to improve next time.



By way of summarising the previous discussion the diagram presents the links between different ways of acquiring knowledge and different teaching approaches. I have attempted to argue that while there is no one best method, overall, there are best methods for achieving certain learning outcomes. The science in teaching is in matching the appropriate method to the desired learning outcome. The art of teaching is the application of that method in ways that suit the particular context (ie the fitness for purpose). Current prescriptions, such as the use of three- or four-part lessons will, if applied slavishly, restrict this artistic contribution and thus place limitations on the most creative elements in the teaching process: the elements which distinguish the expert from the merely competent teacher.

### Some implications for teachers

Most teachers are familiar with using direct instruction but there is greater uncertainty in the use of whole class interactive teaching. Elsewhere in some other cultures class discussion largely consists of an exchange of ideas between pupils with the teacher intervening occasionally to reinforce a point or shift the emphasis. To be successful, teachers and pupils need first to establish procedural rules and then hold regular debriefing sessions where current practice can be assessed and improved.

The more open-ended the task, the greater the ambiguity surrounding the answer the teacher is willing to accept and the greater potential risk of pupils' failure with possible loss of self-esteem. Pupils favour teacher intervention because it reduces this ambiguity and thus lowers the risk. To develop pupils as independent thinkers it is necessary to maintain this ambiguity, which is why teachers should try to reduce the use of guided discovery methods and use other less dependent forms of scaffolding.

Many teachers argue that emphasis on direct instruction and cued elicitation during whole class discussion is the result of the current pressure to teach for the test. But research shows that the same patterns have operated even before the introduction of national curriculum tests and target-setting. Teachers therefore need to explore other possible reasons for the dominance of these forms of pedagogy, particularly the fear that a less dominant role in the learning process might lead to loss of control.

### Some lessons for leaders

Few schools possess an adequate language to discuss the pedagogic strategies described above. Terms such as interactive teaching need to be translated into descriptions of expected classroom behaviours. There is a need continually to pose questions as to what teachers and pupils would be doing if the class were to engage in interactive discussion, independent learning etc.

Usually such questions lead to another layer of 'catch all' phrases such as problem-solving, active learning and so forth. The same cycle needs to be repeated until a set of pedagogic performance indicators can be specified. For example, a constructivist approach requires that exploration will always precede instruction and that the pupils' ideas will determine the focus of discussion etc.

Transfer of learning is another key issue. Research shows that helping children learn how to learn as part of PSHE or in the Foundation Subject Strand in Key Stage 3 rarely carries over into other curriculum areas. In an era of increasing subject specialism, leaders need to develop strategies that ensure a consistency of approach across the whole curriculum.

### Three questions for leaders

- How does a school develop a support system in which the expertise of the most effective teachers (in terms of this research) influences other colleagues' practice?
- How can pedagogic targets across the school/department be set and monitored?
- If one were to evaluate teacher performance in terms of helping children to 'learn how to learn' rather than from test results, what kinds of appraisal and rewards system would be required?

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## What Leaders Need to Know About Learning and Teaching

Barbara MacGilchrist

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This paper examines what we know about learning, the practical implications of this knowledge for teachers and teaching and some overall lessons for leaders. It begins with an exploration of the complex nature of learning, different kinds of learning and the factors that can support or get in the way of learning. It then identifies some practical implications for teachers concerned with the context and content of learning, planning for the different needs of learners and how to use assessment to promote learning. Arising from the review of learning and teaching the paper concludes with an identification of four lessons for leaders and some questions for them to consider with staff.

## What Leaders Need to Know About Learning and Teaching

### What we know about learning

#### 1. It is a complex process

Learning is a complex process, which is multidimensional in nature. It has a cognitive dimension. This involves an active process of meaning-making in which the learner assimilates, constructs and integrates new knowledge in a way that makes sense to him or her and connects previous learning with new learning. To assist with this process some learners find visual stimuli, such as print, pictures and diagrams very helpful, others have a preference for auditory learning, yet others tend to be kinaesthetic in their approach to learning and rely more on a sense of touch or movement.

It has a social dimension. Much of learning takes place in a social setting through interacting, and exchanging thoughts and ideas, with others. In this way, knowledge is co-constructed. The social context also provides an essential framework to enable learners to develop interpersonal relationships, to interpret their experiences and make sense of these in terms of past history and the requirements of the present culture in which they find themselves.

It has an emotional dimension. This involves young people learning to be aware of, and self-regulate, their emotions and to empathise with the feelings of others. Emotional intelligence, as it has come to be called (Goleman 1996), plays a key role in both cognitive and social development. In practice, emotional intelligence manifests itself in the ability, for example, to persist, to stay on task, to exercise self-control and to develop an awareness of the feelings, needs and concerns of others.

#### 2. There are different kinds of learning

Learning can involve:

- learning facts and new skills such as historical dates, multiplication tables, how to surf the net, mix paint or play a musical instrument
- the development of knowledge and understanding about, for example, the content of subjects being taught or fundamental issues concerned with values and beliefs
- learning how to think and to become aware of one's own thinking processes (metacognition) and learning how to learn and to reflect on one's own learning processes (metalearning) – in other words, an awareness of and the development of a repertoire of thinking and learning strategies and the ability to reflect on these and apply them to new situations

These different kinds of learning involve a combination of:

- shallow learning, for example, using mnemonics to remember kings and queens
- deep learning, for example, developing an understanding of mathematical, scientific and historical concepts
- profound learning, such as getting to grips with ethical and spiritual issues

All three levels of learning are needed to become an effective learner and a rounded human being.

## What Leaders Need to Know About Learning and Teaching continued

### 3. There are particular factors that best support learning

There is a growing body of research evidence to indicate that there are some key factors that can support and enhance learning. These can make a real difference to learning outcomes both in terms of test and examination performance and the development of life-long learning attitudes and skills. These factors are listed below.

#### Using assessment to promote learning

A group of well-respected academics who have a long track record of research in this area argue that:

“assessment which is explicitly designed to promote learning is the single most powerful tool we have for both raising standards and empowering lifelong learners.”  
(Assessment Reform Group, 1999, p.2).

What these researchers are talking about is the giving of feedback that enables learners to identify what they need to do to improve and develop ideas about how to go about it. This enables learners to improve their skills, knowledge and understanding and to take increasing control over their own learning. To achieve this, such assessment needs to focus simultaneously on the processes of metacognition and metalearning as well as the content of the curriculum to be learnt.

#### Listening to and respecting the views of learners themselves

This involves creating opportunities for children and young people to talk about themselves as learners, what best supports their learning and anything that may be getting in the way of their learning. In an important study of what pupils had to say about their experience of school, Rudduck et al (1996) argue that:

“what pupils say about teaching, learning and schooling is not only worth listening to but provides an important – perhaps the most important – foundation for thinking about ways of improving schools,” (p.1)

### Creating a school environment in which learners feel safe, cared for and treated fairly

This concerns, for example, the physical environment, the school's behaviour policy, the nature of the discourse and interactions between adults and pupils and between the pupils themselves along with the school's stance on key issues such as equal opportunities, social justice and inclusion.

### 4. There are particular factors that can get in the way of learning

Motivation and self-esteem have a crucial role to play in learning and can determine the extent to which learners engage with their school work. The most significant factors that can turn pupils off learning are listed below.

#### Teachers' beliefs and attitudes about learning and learners

These have been shown to have a noticeable impact on pupils' motivation and self-esteem and consequently their progress and achievement. Studies indicate that teachers have a teaching repertoire which is related to their views of how children learn. It has also been found in numerous studies that teacher expectation has a significant impact on learning. 'What can you expect from these children?' has yet to be eliminated from professional discourse, particularly in relation to pupils from socio-economically disadvantaged backgrounds.

#### Children's beliefs and attitudes about themselves as learners

Children have been found to attribute their success or failure either to ability or to effort from an early age. This stems from their understanding about the nature of intelligence. Studies indicate that some children come to believe that intelligence is fixed and cannot be changed. This can lead them on a downward spiral of what has been called 'learned helplessness' whereby if a child finds something difficult there is a tendency to start saying 'I'm no good at this'. When this happens the learner is reluctant to engage again with the task.

## What Leaders Need to Know About Learning and Teaching continued

Other children come to believe that intelligence is something that can be developed over time. Such children welcome challenging tasks and are motivated and have the attitude that 'if I try hard at this and make a real effort I can improve'. Children's views about intelligence are strongly influenced by the behaviours of teachers and the language they use. Teachers' behaviours are in turn shaped by the culture of the school in which they work.

### Placing too much emphasis on performance

Learning and performance are not synonymous and the relationship between them is complex. Studies show that in settings where performance outcomes are deemed to be all important, such as achieving a certain SAT level or an examination grade, children can be turned off learning and vote with their feet by opting out. Such settings can reinforce the notion that intelligence is a fixed entity, so close down rather than open up learning opportunities. On the other hand, settings which focus on learning encourage a mastery orientation to learning and a 'can do' attitude.

### Implications for teachers and teaching

Teaching is a complex process that, in turn, has a complex relationship with learning. It is the learner who decides whether or not to engage in learning. It is the teacher's job, therefore, to motivate learners to want to learn, to help learners learn how to learn and to enable them to believe that it is possible to do so. To achieve this there are at least four issues for teachers to consider arising from the review of what we know about learning.

#### 1. The context for learning

At issue here is the extent to which the classroom climate encourages pupils to develop a learning orientation. This requires teachers to re-examine their beliefs and attitudes about learning and about the pupils they teach.

What messages are they conveying to pupils about the expectations they have of them through, for example, the language they use, non-verbal behaviours and the way work is marked? To what extent is a learning orientation explicitly fostered through, for example, encouraging children to take risks and learn from their mistakes? A useful way of assessing this is to ask a colleague to observe a lesson from this perspective or better still ask the children themselves. Rudduck and Flutter (2002) suggest that teachers who wish to consult pupils about their learning can ask such questions as:

- What gets in the way of learning in class and what helps learning?
- What are the qualities of a good teacher?
- What makes a good lesson?
- How can feedback be used to improve work?
- Which friends do you work with best and is that different for different subjects?
- Why do boys do less well than girls and vice versa in different subjects?  
What could be done about this?

Consulting pupils is not always easy and on occasions the responses may need sensitive handling. Obtaining this kind of feedback, however, is an essential part of self-evaluation.

#### 2. The content of learning

This involves an awareness that lesson planning needs to include both the content of the curriculum and the development of metacognitive and metalearning strategies. Linked to this is the need to plan for a balance between different kinds and levels of learning across lessons. Section 4 below offers suggestions as to how to do this.

## What Leaders Need to Know About Learning and Teaching continued

### 3. Planning for the different needs of learners

There are several issues to consider here: for example, the recognition that learners come from a wide range of backgrounds and circumstances and that some will need much more help than others to become engaged in the learning process. The challenge is to find ways to manage children's access to learning whilst maintaining the momentum of the curriculum to be covered. Increasingly, teachers are finding creative ways of using information communication technologies to help address this challenge.

Pupil grouping is another issue that needs careful and sensitive consideration as it is linked with the creation of opportunities, for those who need them, to practise and rehearse knowledge and skills, whilst others have the chance to engage in challenging extension activities. Encouraging children to monitor and self-regulate their learning and set themselves individual learning targets are useful ways of supporting this process.

### 4. The use of assessment for learning

The Assessment Reform Group (1999, p.7) identifies ways in which assessment for learning can become embedded in the learning and teaching process:

- It involves sharing learning goals with pupils.
- It aims to help pupils to know and to recognise the standards they are aiming for.
- It involves pupils in self-assessment.
- It provides feedback that leads to pupils recognising their next steps and how to take them.
- It is underpinned by confidence that every student can improve.
- It involves both teacher and pupils reviewing and reflecting on assessment data.

The Assessment Research Group (1998, p.8) also offers practical suggestions as to how teachers can gather information about pupils' learning and encourage pupils to review their work and their learning strategies critically and constructively. These include:

- observing pupils – this includes listening to how they describe their work and their reasoning
- questioning, using open questions, phrased to invite pupils to explore their ideas and reasoning
- setting tasks in a way that requires pupils to use certain skills or apply ideas
- asking pupils to communicate their thinking through drawings, artefacts, actions, role play, concept mapping, as well as writing
- discussing words and how they are being used

### Lessons for leaders

Four particular lessons emerge from this review of learning and teaching:

- Leaders need to keep a focus on learners and the learning process and to create opportunities across the school and within departments for pupils to play a key role in this process.
- Leaders need to have a learning and teaching strategy that focuses on practical strategies to enable teachers to review and improve the context for learning, the content of learning and planning for the different needs of learners.
- Leaders need for a whole-school policy on assessment for learning and how it will be actioned in classrooms.

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- Leaders need to make explicit those values and beliefs about learners and their learning to which everyone subscribes, and to review the extent to which these are being enacted in day-to-day practice.

A starting point for addressing these lessons could be to ask the following questions:

- What is it like to be a learner in this school?
- Do we as a staff believe that for all learners the sky is the limit?

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