



Boyd, Pete, Hymer, Barry and Lockney, Karen (2015) Learning teaching: becoming an inspirational teacher. Critical Publishing, St Albans, UK.

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# Chapter 1 Practical wisdom *and* public knowledge

*Brains are born, and minds are made; and one of the privileges of the teaching profession is to have an important part to play in the shaping of minds.*

*(Elliot W. Eisner, 1998, p 23)*

## Learning teaching

This book is not a straightforward 'how to teach' professional manual. It doesn't point you in the direction of current national directives or offer a teaching-by-numbers 'tips for teachers' guide. Nor does it offer any easy or quick route to professional competence and qualified teacher status. We believe there is merit in many of the publications for beginning teachers, offering sound advice based on established educational orthodoxies and would encourage you to engage reflectively with such texts.

This book, however, is more of an additional or advanced critical reader; it is aimed at beginning teachers but we hope it may also be of interest to more experienced practitioners. In writing the book we have made a few assumptions about your knowledge of the teaching basics. There is, after all, some consensus around the characteristics of well-planned, effective teaching: the value of being present at the start of a lesson to receive and greet your class as individuals and with respect, for instance, or the thoughtful development of intended learning outcomes as a useful step in lesson planning. We recognise too that it can be helpful to develop 'success criteria' and to share them with the learners so that they have a better idea of what success in the learning task will look like. It also goes without saying that following skilful introduction to a new idea, learners will benefit from guided practice, during which they receive feedback to help improve their work. And further independent practice is then important, especially when the learners have to apply new learning to solve problems within a different context.

We don't labour these and some other points, but this does not mean we disregard them. But even these educational verities are open to challenge: teaching is at least as much an art as a science, and art holds open the potential for disrupting orthodoxy, for exploring new

perceptions and ways of doing things in pursuit of new truths that work for you – the teacher-artist. And in science too we hold to the notion of provisional truths, pending the rebuttal of established theory and the realisation of evidence for new hypotheses that you, the teacher-scientist, can continue to test, develop and improve.

As you are beginning to read *this* book we assume that you are interested in becoming an *inspirational* teacher, the kind of teacher that learners will remember. An inspirational teacher is one who captures a learner's imagination, challenging and moving that learner beyond 'schooling' and 'attainment' to enjoy a rich and lifelong engagement with learning. The inspirational teacher models enthusiasm for the subject and shows care for learners but is also able to hold back and take risks in allowing learners to find their own way of becoming and being (Barnett, 2007). Your memories of such a teacher will probably be from your own school or college experience. Now that you are a teacher your perspective could be very different, so you should seek out, observe and talk to the great teachers in your current workplace. Try to gain some insight into the journey they have made to become the teachers they are today, and consider what route you in turn will take.

When you watch an expert at work you may feel daunted and think, 'I will never be able to be like that.' Because teaching is largely about relationships with learners it is a very personalised and varied professional practice. You should certainly seek to learn from the expert you are observing, but you need then to work towards becoming your own style of inspirational teacher. While observing the expert we would encourage you to consider to what extent their practice is based on instinct and on practical ways of working, and to what extent it is research-informed and based on the literature on how to teach and how children and young people learn. To what extent does the lesson conform to national or institutional expectations, to the requirements of school inspectors and of the headteacher?

As with all relationships, becoming and being a teacher is not simply about developing a set of skills or techniques. Learning teaching is an emotional experience, and success will require you to strengthen a range of dispositions including your self-belief, self-awareness and resilience. In fact, the journey of becoming a teacher will be helped by you developing the same kinds of thinking dispositions that you will wish to nurture in your learners. More on that later.

You might be thinking that you need to learn to teach in the ways that are expected by school inspectors and your headteacher. There's a degree of truth in that! However, in England, for example, after 25 years of centrally controlled, detailed policy on how to teach, things are not as clear-cut as you might think. Inspectors are usually looking for engaged, focused learning and for evidence that learners are making progress. In the best cases they would hope to see that learners are being inspired by the teacher. One of the joys of teaching is that there is no global agreement on what great teaching actually is, and so becoming an inspirational teacher is a lifelong experiment in learning. We do perhaps recognise great teaching and learning when we see it, when there is challenge, trust, collaboration, enjoyment, engagement and progress in the classroom. But it is too complex, too situated in particular settings, too dependent on the identity and personality of the teacher and learners for us to be able simply to tell you how to do it. Policy-makers and politicians may strut and fret their hour upon the stage, sometimes basing their views of 'best practice' largely on their own

experiences of schooling, but as a professional you must learn to question, evaluate and test policy, theory, professional guidance and research evidence, while keeping your eye firmly on the needs of your learners.

Many school systems around the world are in a period of high accountability. In England this is characterised by a national curriculum, targets based on test results, high-stakes ‘name and shame’ inspection processes and a competition-driven ‘choice’ of schools offer to parents. These kinds of school education systems appear to be truly within the ‘age of measurement’ (Biesta, 2011). Within this environment many schools and teachers continue to thrive and have learned to dance to the piper’s tune, by teaching inspector-pleasing lessons when required and by refining their approach to maximise test results. Despite this context, many schools and teachers have managed to maintain a values-based approach and a moral purpose in their work by mediating the high-accountability external policy environment to protect their learners from its most damaging influences. This latter approach requires bold school leaders and brave teachers who may adopt an ‘activist’ stance (Sachs, 2003) and are willing to question policy and the wider purposes of education. In this book we offer a metaphor for teacher professional learning as **interplay** between the practical wisdom of teachers on the one hand and public (published) knowledge on the other. Many new teachers favour practical wisdom ways of working in their current school setting. While this is perfectly understandable, in this book we propose an inquiry-based approach promoting interplay between that local situated knowledge of teachers and public, published, knowledge, including learning theory, research evidence, professional guidance and policy.

Gert Biesta argues that ‘education needs to have an orientation toward the freedom and independence of those being educated’ (2011, p 2). From a philosophical perspective he proposes a mix of three broad purposes for education:

- qualification;
- socialisation;
- subjectification.

By **qualification** he means knowledge and certification. By **socialisation** he includes preparation for family life, citizenship and employability in a developing and uncertain world. In arguing for ‘**subjectification**’ as an essential third purpose of education, Biesta (2011) offers a concept upon which schools and teachers may be able build their resistance to the accountability agenda and more positively drive forward their moral mission. Subjectification, as a purpose for education, means allowing children and young people the opportunity to develop as unique individuals and ‘singular beings’, to respond creatively to planned learning activities and occasionally to surprise their teachers.

The age of measurement does not tend to encourage such open-ended learning and prefers predictable lessons beginning and ending with reference to tightly defined intended learning outcomes. Allowing for subjectification requires schools and teachers to take risks, perhaps to ‘dare’ to include at least one open-ended intended learning outcome in each lesson, and to facilitate learning activities that are adventurous – meaning that the outcome is uncertain (Mortlock, 1987). In developing an education that allows subjectification, the mantra ‘no

risk, no learning' is a useful one. We agree with Biesta's idea that teachers must be more than competent; they must be educationally wise and have the 'ability to make situated judgements about what is educationally desirable' (Biesta, 2013).

In your engagement with this book we would encourage you to maintain a broad, values-based approach to your work and development as a teacher. We recommend that you adopt an activist stance that engages with and questions the wider purposes of education, and is aware of the contextual pressures within our age of measurement. Be brave and challenge the system! When you are more established as a professional teacher you will be able to push back against some of the flaws in the education system in which you are working, and throughout your career you will come across many teachers in schools who maintain a critical and proactive stance. In the early part of your career you might strive at least to maintain a questioning approach despite the pressures you may feel to conform, to avoid questioning current practice, to keep your head down and simply to get through your programme or probation. Position yourself heroically, as part of the solution rather than the problem. As *The Clash* put it, habituation to the prevailing order carries a risk to your own integrity:

*You grow up and you calm down...*

*you start wearing blue and brown...*

*you're working for the clampdown.*

So throughout your career we ask you to maintain a questioning approach, to reject the notion that currently accepted 'best practice' is something set in stone and good for all time, to aim to contribute to progress in education rather than mere survival and the status quo. In short, we ask you to be not merely an effective teacher, but an inspirational one.

## About this book

### Features of this book

This book is deliberately structured to acknowledge the complexity of teaching and to provoke interplay between practical wisdom and public knowledge. There are five distinctive features.

- Each of the five 'core' chapters begins with a classroom 'scenario' involving a new teacher. This provides a grounded case study as a focus for the chapter.
- Each of the five core chapters is based on a pedagogical dilemma that teachers commonly face in their everyday work. These dilemmas acknowledge the complex orchestration that teaching involves and the choices, based on professional judgement, that you will need to make. As stated previously, we recommend that you read this book in conjunction with a more standard 'how to teach' text covering prosaic but important areas of work such as planning, inclusion, teaching, behaviour management, assessment and professional learning.

- Each of the five core chapters includes a section on ‘learning power’ which introduces current thinking on teaching and learning.
- Each of the five core chapters includes a section on ‘workplace learning’ which introduces current thinking on your professional learning as a teacher.
- The book includes regular prompts for ‘things to try’ and we strongly recommend that you engage with the book over a sustained period of time, interwoven with experimentation and practical changes in your classroom practice.
- By naming the five core chapters with pedagogical dilemmas we are being deliberately provocative. These dilemmas provide a useful perspective on the complex work of a teacher. As William Blake observes: ‘Without contraries, there is no progression’. The dilemmas are reflected in the titles:
  - Belief versus ability;
  - Autonomy versus compliance;
  - Abstract versus concrete;
  - Feedback versus praise;
  - Collaboration versus competition.

At face value some of these dilemmas may seem confusing or even plain wrong. No problem – read on!

## Dilemmas faced by teachers

**Belief versus ability:** Let’s face it, some children are brighter than others. Not everyone can become a Professor of Astrophysics. And yet this book argues that having a growth mindset, believing that effort and deep practice will make you smarter, is more important than inherited abilities. What a dilemma for a teacher!

**Autonomy versus compliance:** All teachers know that well-behaved children who settle down quickly to work and do as they are told are a pleasure to have in a classroom. And yet this book emphasises the need to develop self-regulated learners who ask critical questions, think creatively and self-assess their own work. What a dilemma for a teacher!

**Abstract versus concrete:** Surely it is obvious that clear explanations illustrated by well-chosen, concrete examples are the bread and butter of good teaching? Authentic, practical tasks, relevant to the cultural and social lives of learners, are certainly important. And yet this book argues that teachers need to plan their key questions and learning activities around the more abstract key concepts underpinning a lesson and that meta-learning and metacognition are at least as valuable as focusing on more concrete content. What a dilemma for a teacher!

**Feedback versus praise:** Receiving praise is clearly motivating. Praise helps to create a positive learning environment in the classroom and school. And yet this book argues that

praise – especially lavish praise – carries hidden and serious costs. Learning is enhanced by struggle, making mistakes and failing, provided that the learner receives feedback in relation to their effort, strategies and dispositions and that self-assessment is encouraged. So to praise or to offer feedback – what a dilemma for a teacher!

**Collaboration versus competition:** There is nothing like a bit of competition to motivate learners. It can be managed in a positive way and does not do much harm. We know that ability grouping makes teaching more manageable. And yet this book argues that working together in mixed groups is more powerful for learning. What a dilemma for a teacher!

These dilemmas reflect key issues arising from our interpretation of the educational research evidence base and our own teaching experiences. In the next sections of this introductory chapter, we will consider some basic ideas about learning. In line with the rest of the book this includes a focus first on your learners and then on your workplace learning as a teacher.

## Overview of this book

**Table 1.1** An overview of the core chapters (2 to 6) of this book

Chapter title: teacher's dilemma	New teacher scenario: practical wisdom	Learning power: public knowledge	Teacher workplace learning: public knowledge	Reflection on the lesson: interplay between practical wisdom and public knowledge
<b>Chapter 2</b> <b>Belief versus ability</b>	Amy's poetry lesson: Becoming a writer	The learning power of mindset	Workplace learning: Developing teacher identity	In each core chapter we will ask you to reflect critically on the scenario before offering our own perspective. The complexity of teaching means there are no definitive answers.
<b>Chapter 3</b> <b>Autonomy versus compliance</b>	Humza's mathematics lesson: Becoming a mathematician	The learning power of self- determination	Workplace learning: Being an inquiry- based teacher	
<b>Chapter 4</b> <b>Abstract versus concrete</b>	David's geography lesson: Becoming a geographer	The learning power of going 'meta'	Workplace learning: Teachers' pedagogical content knowledge	

<b>Chapter 5</b> <b>Feedback</b> <b>versus praise</b>	Helen's parents' evening: Becoming a self-regulated learner	The learning power of self- regulation	Workplace learning: The teacher as practitioner researcher	
<b>Chapter 6</b> <b>Collaboration</b> <b>versus</b> <b>competition</b>	Sammie's science lesson: Becoming a scientist	The learning power of working together	Workplace learning: Teacher learning communities	

## Learning power: what do we mean by 'learning'?

*O this learning, what a thing it is!*

(Shakespeare, *The Taming of the Shrew*,  
Act 1, Scene 2, line 159)

We put the word 'learning' at the beginning of this book's title, and at the heart of every page within it. In this way we are signalling its importance and placing it alongside 'teaching' with equal weighting. We are committed to the idea that learning is for teachers as well as for their learners. Ongoing professional learning is part of becoming and being a teacher. Given its prominence in our thinking, it's worth reflecting on what exactly we mean by the word 'learning'. Most dictionary definitions of 'learning' see this concept presented quite traditionally, as *the acquisition of knowledge or skills through experience, practice or 'being taught'*. After all, it is certainly very reasonable to propose that schooling should equip learners with worthwhile cultural knowledge. This tends to be the vision of learning that is favoured by politicians and civil servants, for it is they who assume overall responsibility for ensuring that the nation's children and young people develop the skills and knowledge necessary to thrive in society. Seen through this lens, it's your job, as a teacher, to deliver these outcomes to your learners!

This vision is so familiar it is often seen as unproblematic and incontestable. So the thinking goes, 'Of course learning must involve acquiring knowledge and skills, and effective learning involves acquiring these efficiently.' Take a moment, however, to reflect on the hidden assumptions underlying this definition: the notion of 'acquiring' something implies some degree of transaction – and the necessary separation of 'that which is known' from 'the knower'. Within this conceptualisation, it's the teacher's job to find ways of efficiently transmitting the fully formed and pre-existent piece of knowledge or skill to the learner.

The view of learning as 'transmission' was well expressed some years back, in a radio exchange between the interviewer John Humphrys and the first chief inspector of English schools, Chris Woodhead (*On the Ropes*, BBC Radio 4, 29 June 2004). Woodhead was asked,



'What, for you, is the purpose of education?' The response was immediate: 'The transmission of worthwhile knowledge.' Humphrys pressed further – 'Is that all?' Slight pause, then, 'Yup, pretty much.'

If learning is merely a transaction, then Woodhead's is correct – there is not much more to education than transmission. Challenge, complexity and creativity certainly aren't players. On the contrary, there is value in keeping things simple, in ensuring that the learner 'receives' that which is 'sent' as efficiently and as speedily as possible. Challenge complicates things unnecessarily, slows down the learning-by-acquisition process and has the potential for giving rise to 'mis-deliveries' – moments where learners stray down new, unintended and probably mistaken delivery routes.

We are mindful in this book that new teachers in many countries are entering a profession in which the dominant forces at play in their training and their practice tend to go along with this traditional vision of learning: learning = being taught. So it follows naturally that learning to teach = being taught to teach – and it's the job of the people teaching the teachers to keep things simple, rapid and efficient. This is the world of pre-established and standardised 'learning outcomes' driving every lesson to pre-established outcomes, and the logical conclusion to this vision of learning and learners is 'scripted lessons'. Like learning, teaching comes down to the acquisition of certain approved skills, techniques and 'worthwhile' knowledge. It's a technical and relatively straightforward process. Do what's always been done and KISS – Keep it Simple, Stupid.

However, there is another, more ambitious, more evidence-based but also more challenging conceptualisation of learning which underpins this book and our beliefs as educators. Learning could also be seen as the *co-construction* of knowledge, skills, values and dispositions through experience, practice or 'being taught'. This implies a much more active role on the part of the learner, and a complex and multi-directional interplay between the learner, that which is learned (the curriculum) and the learning environment. It also implies that the relationship between you the teacher and your learners is not one of simply 'giving' them knowledge. The relationship between teacher and learner in this perspective is more like that of collaborators who are exploring the curriculum subject discipline together. As the teacher you are a guide or mentor, providing expert guidance and suitable inquiry-based activities to challenge the learner and help her to become a member of the subject discipline community – for example, a mathematician, a historian or a scientist. The key features of learning through construction include identification of initial ideas, leading on to exploration of possible explanations. With time to think and working within a social situation, the learner constructs new explanations.

Metaphors – linguistic representations – are helpful devices that we use to capture the human experience of learning (Lakoff and Johnson, 1980). However, dominant metaphors may be misleading (Hager, 2008). As teachers, the metaphors we hold for learning are important because they shape our conception of knowledge and our approach to teaching. The terms 'transmission' and 'construction' may be seen as contrasting metaphors for learning and each may be linked to bodies of learning theory (behaviourist and constructivist). Metaphors for learning are found in the everyday talk of teachers and their learners and are

a useful way to link the everyday practical wisdom of teachers to more formal public knowledge such as learning theory.

How do these metaphors for learning play out in your actual classroom? To make the distinction between them clearer, think of some item of knowledge, concept or skill that you'd like your learners to acquire. Now imagine teaching this via transmission, and then via construction – how would these lessons be different? [Table 1.2](#) provides a worked example.

**Table 1.2** An example learning activity considered through the metaphors for learning of transmission and construction

Area of learning	Transmission	Construction
The effects of inertia	Set up an experiment where you place a small ball on a piece of paper, then pull the paper forward quickly (or more bravely, try the old pulling-the-tablecloth-from-a-set-table trick!). Point out that the ball's behaviour is explained by inertia – the tendency for a stationary object to remain stationary unless other forces act on it. Correct misconceptions, clarify the effect of friction, the need to observe the ball in relation to the wider environment – not just its position on the paper, etc. Ensure that all learners meet the desired learning outcome.	After initial modelling of the same experiment, invite your learners to work in small groups or pairs and to try out the experiment themselves and to provide three or more possible explanations for the ball's behaviour. For each explanation, seek to provide a counter-explanation. What are the conditions that affect the ball's behaviour? Ask each pair to compare their findings with another pair. Facilitate a whole-class discussion, playing devil's advocate, introducing terminology, probing for understanding, implications, consequences, etc.
Desired outcome	For learners to learn that the ball's behaviour is <i>explained</i> by the phenomenon of inertia.	For learners to learn that the ball's behaviour is <i>described</i> by the phenomenon of inertia.

This second conceptualisation of learning has a strong theoretical pedigree in the work of such twentieth-century educational giants as Vygotsky, Dewey, Piaget and Bruner. Despite this hefty theoretical hinterland, or perhaps because of it, it can be viewed with some suspicion by many politicians, press columnists, practitioners and even researchers as a relic of a former 'progressive' era. There has been considerable resistance to making a shift from considering teaching as transmission towards considering learning as construction. In part, this resistance is linked to the increasing levels of accountability in education that are based on measurement of achievement using test results – it is easier to measure learning within the 'transmission' metaphor for learning. Moreover, 'theory' seems less immediately functional: theorists haven't always been very good at making the links between theory and

day-to-day real-world practice: When faced with 9Z on Friday afternoon, it's trench-lore and experience that matters, not some theoretical mumbo-jumbo! Little wonder that we often fail to see the truth of Kurt Lewin's words, that 'There's nothing more practical than a good theory' (1952, p 169). The practical wisdom of everyday practice in school is underpinned by interpretations of learning theory. When a theory is incorporated into practice it becomes 'common sense'.

Researchers who adopt a positivist perspective, such as the psychometrician John Hattie, could see educational constructivism as necessarily implying woolly, learner-led and teacher-lite approaches, rather than embodying the intense rigour that should underpin all constructivist practice. This is because constructivist practices aren't always easy to operationalise in research terms: almost by definition, constructivist approaches don't lend themselves well to tightly controlled empirical studies – there are too many complex variables at play. And richly nuanced qualitative studies on classroom learning don't compute in vast meta-study syntheses of the research evidence base. In later chapters, however, we will seek to show that the most powerful influences on learner achievement as identified by researchers like Hattie are all strongly dependent on teachers using outstanding constructivist practices.

It's worth noting here that the constructivist's synergistic interplay between teacher and learner is beautifully captured by Hattie himself in his influential book, *Visible Learning* (2009). 'Visible learning', for Hattie, is what happens when the teacher sees learning through the eyes of the learner, and the learner becomes her own teacher. Hattie believes this is what we should be aiming for as teachers, as it characterises the most powerful influences on achievement. We contend that visible learning is most likely to be found in high-quality constructivist exchanges, and will be least in evidence in those learning encounters which are essentially transactional in nature, from teacher to learner. It is ironic, therefore, that Hattie himself is sceptical about constructivism – perhaps because what has sometimes passed for 'constructivist teaching' has been undeniably weak – overvaluing learners' licence to 'explore their own learning' with minimal support and structure from the teacher. We see these instances as examples of poor teaching, not as exemplars of constructivism at work.

It is this second way of understanding learning – ie constructivism – that points us in the direction of *challenge* as a vital constituent of an outstanding education for your learners. For if learning is a dynamic, light-footed dance between multiple actors engaged in the task of knowledge or skill construction, then challenge, doubt and complexity are to be valued and pursued as fertile territory for the construction of both deep *and* surface meanings, for the asking of new questions and the exploration of new lines of inquiry. Because teaching, like medicine, law and any advanced profession, is *not* an exact science: 'Uncertainty is the parent of professionalism and the enemy of standardisation' (Hargreaves and Fullan, 2012, p 107). Or as Lawrence Stenhouse put it, 'Education as induction into knowledge is successful to the extent that it makes the behavioural outcomes of the students unpredictable' (Stenhouse, 1975, p 82). This links to the idea developed by Gert Biesta (2013) that the complexity of teaching and the multiple paradigms and ways of knowing within the field of education make it necessary to trust teachers' professional judgements and accept the 'beautiful' risk of education.

In the past, when we undertook our own postgraduate teacher education programmes, it was impressed on us that we must differentiate the work we set our learners. What we took this to mean was that the work we set our learners should be ‘pitched to their ability’. If we did our job well, then any one learner should receive work that she could do – and without too much of a struggle. In practice, this meant that we spent time dooming our learners to relatively easy successes and making them vulnerable to the infrequent experience of struggle, setbacks and ‘failures’. This is the fast-track to developing passive, unresourceful learners who show as much stickability as a Teflon-coated pan. When challenge is a consistent and well-measured part of their everyday classroom diet, however, learners learn to reach further and deeper in their learning, and to build the reservoirs of resilience, grit and intrinsic interest that will sustain them in all learning encounters. It is helpful to reflect on examples such as learning to ride a bike or to drive a car. These usually involve another and more skilled person (a teacher), require both learner and teacher to take risks and require persistence. Both of these considerable challenges, for most people, are about mastery; failure is only temporary and persistence and practice at the edge of current skill levels will eventually lead to success.

We would like to give you a contrasting message about differentiation from the outset: differentiation is important, but see this as differentiation by challenge – not ability (ability is an alluring but dead-end concept educationally speaking – see the [next chapter](#)). Ask yourself: ‘Is this work likely to challenge this learner?’ If it is, then great, just make sure that it isn’t way too much of a challenge – or at the very least make sure that the high challenge is matched by the high quality of feedback the learner receives. If it isn’t sufficiently challenging, then up the ante, and fast! Challenge is a relative concept – relative to a learner’s current levels of achievement. When differentiating by challenge (not ability), aim ultimately for a roughly 50:50 ratio of success to failure. ‘Is this work likely to present this learner with a roughly 50 per cent prospect of success, or is it more like 90 per cent?’ When there’s a significant prospect of failure the expectation builds in the learner that learning is necessarily hard work – otherwise, it’s simply practising past learning! Learners must stop seeing ‘failure’ as something to avoid, as the source of humiliation, but as evidence that new learning is struggling effortfully into existence. The 50:50 ratio is of course a rule of thumb only, and you’ll need to be flexible with some learners as you wean them off an expectation of initial success.

The entrepreneur and *Dragons’ Den* star Peter Jones said in an interview, ‘There’s a word that resonates in schools and that’s “failure”: you pass or fail’, says Jones. ‘But what enterprise and entrepreneurship does is show that there is no such thing as failure, there’s only feedback. I think that’s a really important message to tell every child’ (Peter Jones, *Telegraph*, 16 March 2015).

However noble, true and aspirational the second conceptualisation of learning as ‘construction’ and its implications for challenge might seem, is it any good to you as a teacher? Is it compatible with your own early experiences? Is it compatible with an assessment system that seems bounded by ‘right answers’ and a settled curriculum? Is it compatible with the organisational structures within which you work? Will it be tolerated by your senior leaders,

mentors and the inspection system they must respond to? Let's be quite clear from the start about our position on all these questions:

1. Only you, through a process of active and honest reflection, will be able to gauge the extent to which each understanding of 'learning' matches your own experiences in the classroom. This book will act as a guide to these reflections. Will you see your learners acquiring pre-existent knowledge via efficient and predictable transactions, or will you instead witness what at times seems to be – even (perhaps especially) in well-managed and task-focused classrooms – a whirring confusion of influences and outcomes?
2. Though you might in fact reach your peak as a teacher only after about eight years in the job (Day and Gu, 2010), new teachers have the right to be outstanding from an early stage in their careers, and your response to challenges and your purposeful creation of challenges for your learners will be an important part of making this happen. The notion of challenge is one we return to throughout this book, and we ask that you value it in all its manifestations.
3. There is no contradiction between the challenge of constructivism with its emphasis on the active roles of both teacher *and* learner and the demands of the assessment system. On the contrary, there is a strong link between the two. In most classrooms pursuing the traditional view of learning, teachers take the lead in setting targets and challenges for their learners. But when learners are tasked with setting their own challenges and goals, some astonishing effects can be seen. In fact, some research has found that the academic performances of learners with the most challenging goals are 250 per cent (!) higher than those with the easiest goals (Wood and Locke, 1987). And John Hattie, in his huge and ongoing synthesis of multiple studies, makes it clear just why challenge is so important in promoting learning and achievement: 'Challenges help to make learning easier and thereby have positive effects on long-term retention' (Hattie, 2012, p 102). Counter-intuitive but true!
4. School inspectors are generally explicit about the value they place on challenge. In fact, if your lesson is consistently low on challenge, then you can kiss goodbye to any hopes of great performance data and achieving a top grade from a classroom observer.

In [Chapter 2](#) we unpick all of this in more detail, when we concentrate on the role of *mindset* in your development as a teacher and your learners' development as learners.

### **Things to try**

- » *Think of a key concept, big idea or skill that you would like your learners to engage with, and as shown in [Table 1.2](#) try to sketch out a design for a learning activity or lesson from a perspective of learning as 'transmission' and as 'construction'.*
- » *Observe a lesson taught by a colleague or make a video of one of your own lessons. Evaluate the lesson in terms of the metaphors for learning as 'transmission' and as 'construction'. Consider if the lesson might be redesigned to be stronger in terms of learning as construction.*

- » *Ask yourself if there are any situational nudges you might experience when planning to teach for transmission or for co-construction. For instance, is one approach more likely to be tried when you're working with a lower- or upper-set group? With an older or younger class? With a more or less socially skilled group?*

## Teachers: professional learning as 'interplay'

This section focuses on your professional learning as a teacher. In this book we offer a new situated metaphor for teacher learning as **interplay** between the horizontal domain of practical wisdom and the vertical domain of public knowledge.

As we have already seen, metaphors are powerful ways to capture the essence of learning and we all use them frequently to understand our practice as teachers. A metaphor for learning is a figure of speech that identifies learning as being the same as some other unrelated activity. So if we suggest 'giving' you some information or 'delivering' a lesson, then we are using a transmission metaphor for learning. It is helpful to link such metaphors to different theories of learning.

We might suggest that the next section of this book will 'give' you some information or knowledge, as if knowledge might be like a nicely wrapped present. You may think that you can collect such fragments of knowledge and build them into a pile or body of knowledge. These kinds of metaphorical statements refer to the most widely used 'transmission' or 'acquisition' metaphors for learning and may be aligned with a behaviourist theory of learning as transmission.

Alternatively, we might work on a problem together and reach a shared understanding through dialogue around an issue or perhaps eventually agree to differ about the best solution. The learning involved might best be expressed as 'participation' or 'construction', which is a metaphor that is more aligned to social constructivist learning theory and is widely used by teachers and teacher educators as a rationale for active and collaborative learning strategies.

In a study of teachers in Spain the majority of metaphors for learning (technically these were similes because they compare using terms such as 'like' or 'as') were related to transmission, such as 'learning is like a sponge which soaks in the water'. Another large group of similes held by the teachers were constructivist, such as 'learning is like setting the bricks of a house. The learner is the mason and the house at the same time. S/he is also the owner of the house. The teacher is the site foreman.' Only two (5 per cent) of the similes offered by the teachers in the study were more closely related to situated or workplace learning theory; one referred to ants working together and the other used the idea of a tour guide negotiating an itinerary with their group of tourists for a visit to an unknown place (Martinez et al, 2001).

This third group of metaphors, including 'contribution' or 'becoming', have developed through study of workplace learning and may be linked to situated learning theory (Lave and Wenger, 1991; Wenger, 1998). These metaphors acknowledge the mediated, situated, social, dynamic and contested nature of professional knowing (Blackler, 1995). Metaphors for professional learning as 'becoming' also take account of the identity building involved,

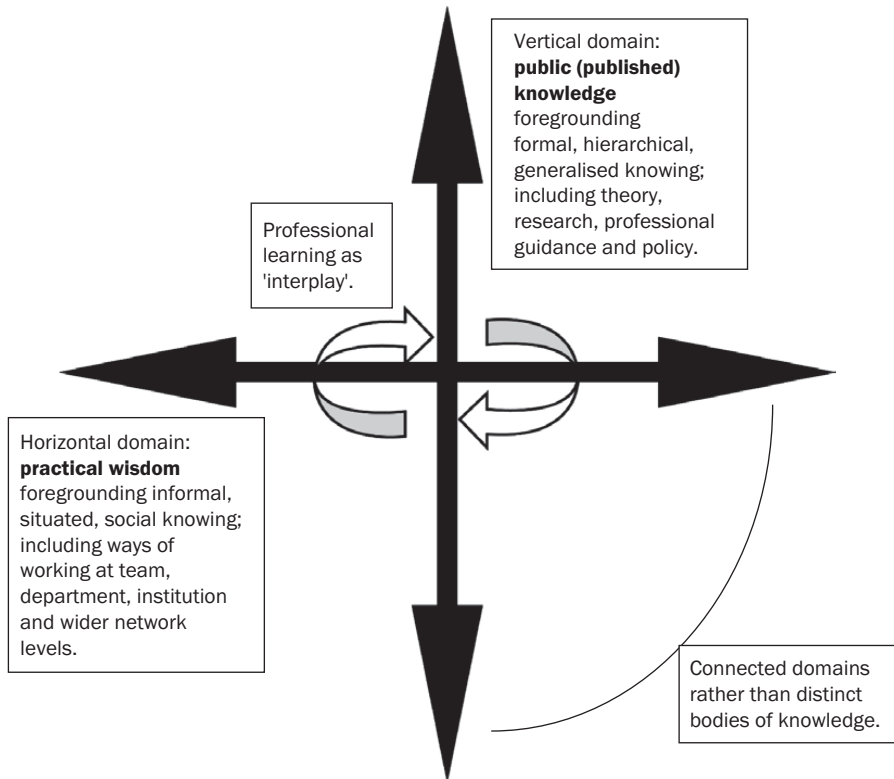
for example, as you ‘become’ a teacher (Wenger, 1998; Hager, 2008). Situated learning theory highlights a key challenge as you become a teacher: you need to learn through working in particular schools but you are preparing for a career in which you will need to be able to work in a variety of settings and contribute to wider networks. Local ways of working among teachers in your placement or first school post will be a powerful influence on you. You are likely to learn a great deal from local ways of learning, but this practical wisdom, ‘what works here’, must not overwhelm your ability to question what you see and do, and you should actively seek external perspectives by engagement with the literature as well as with external colleagues and networks.

The professional development of teachers sometimes suffers from a dominant but misleading metaphor of the ‘gap’ between theory and practice. This metaphor is frequently used by teacher educators and is often taken for granted in research and professional guidance publications. The problem with the ‘gap’ metaphor is that it assumes a separation between ‘theory’ and ‘practice’ as if these were two distinct bodies of knowledge. This misleading way of considering professional knowledge has developed in a higher education context where traditional subject disciplines have dominated and professional fields such as teacher or nurse education may be considered as peripheral newcomers.

This book explicitly adopts and builds on an alternative metaphor for teachers’ professional learning as ‘interplay’ between the vertical domain of public knowledge (theory, research, professional guidance and policy) and the horizontal domain of teachers’ practical wisdom – local ways of working within specific school settings (Boyd, 2014; Boyd and Bloxham, 2014). In this metaphor for teachers’ learning, the vertical and horizontal domains of knowledge are seen as interconnected dimensions rather than distinct bodies of knowledge. The ‘interplay’ metaphorical framework is illustrated in [Figure 1.1](#).

The complexity of teacher knowing does not allow a simplistic distinction between public knowledge and practical wisdom. By this we mean that within the practice of a teacher or team of teachers there will be elements of public (published) knowledge but its interpretation and application through a complex social process may make it appear as a simple routine or way of working. For example, in a typical school the teachers’ everyday approach to engaging learners and managing their behaviour will often reflect research-based findings often referred to as the ‘behaviour for learning’ literature. The teachers concerned, however, may sometimes be unaware of the link to public knowledge, or in some cases may even vehemently deny that their practice is research-informed!

The horizontal domain of teachers’ practical wisdom foregrounds the practical ways of working that are dominant within a particular school setting. This knowledge is held socially by the team of teachers and teaching assistants and will include unwritten rules and ‘tacit’ knowledge (hard to explain or write down). Buried within this practical wisdom will be hidden the mediated bones of public knowledge. The teachers have adapted theory, professional guidance and policy to their way of working and the features of their particular setting. Using the term ‘practical wisdom’ for this domain of teacher knowledge is a deliberate attempt to acknowledge the significance of classroom teacher expertise that is based on doing the job at the ‘chalkface’. This domain of knowledge is horizontal because it changes from one setting to another and is developed and held by teams of teachers collaborating with their peers.



**Figure 1.1** Teacher professional learning as ‘interplay’ between practical wisdom and public knowledge (Boyd, 2014; Boyd and Bloxham, 2014)

The vertical domain of public knowledge consists of published literature including learning theory, research papers, professional guidance texts and official policy. This domain of knowledge is vertical because it is hierarchically ordered through the processes of peer review and publication. This publication process creates and reflects power within the vertical knowledge domain. For example, a text gains status through its publication by a well-established educational publisher, or through online peer review. A paper gains status through publication in a peer-reviewed research journal and through citation by other writers. National government policy also has high status and even a local school policy gains an element of power through publication. However, despite the more abstract and generalised nature of this vertical knowledge it cannot be separated completely from more mundane and common-sense judgements. The best theoretical writing will use concrete examples and practitioners at least will partly understand theory through their application of the idea to their own work context or experience.

The vertical and horizontal domains of knowledge are therefore not distinct bodies of knowledge but rather form two dimensions of teacher knowing.

## Interplay

Within this metaphorical framework, the term ‘interplay’ is intended to capture the power and tension involved in teacher learning within the relationships between teachers, school



leaders, inspectors and teacher educators (Boyd, 2014; Boyd and Bloxham, 2014). However, 'interplay' is also intended to capture the fun and creativity involved in working with children and young people to plan, teach and evaluate learning outcomes. From a sociocultural or situated learning perspective, the term 'interplay' helps to capture the 'dynamic' and 'contested' characteristics of professional knowledge, which is better expressed as professional 'knowing' (Blackler, 1995). This metaphor of interplay also helps to acknowledge the role of artefacts in teacher learning. These artefacts may be practical objects such as a school policy or scheme of work, but they may also include abstract concepts used in your workplace such as 'excellent work' or 'critical thinking'.

The interplay metaphor arises from a third area of learning theory, alongside behaviourism and constructivism, which strongly influences the view of teachers' workplace learning adopted in this book. This third perspective is known as 'situated learning theory' and was strongly influenced by the work of Lave and Wenger who studied apprenticeships in a range of different contexts (Lave and Wenger, 1991; Wenger, 1998). Lave and Wenger developed the concept of the 'legitimate peripheral participation' of a newcomer in a workplace, as they learn the written and unwritten rules and through negotiation gradually earn membership of the 'community of practice'. Situated learning theory provides a useful perspective through which to consider the agency of the teacher, their power and influence as an individual, within their workplace context. As a new teacher you may feel that you do not wield much power, but in fact in your classroom you are the expert and have considerable autonomy and influence over the experiences of your learners. Developing your expertise and confidence will enable you increasingly to take charge and to contribute to development in and beyond your own classroom. That is what becoming a professional teacher is about and this book aims to support you in that journey.

By adopting the metaphor of teacher learning through 'interplay' as the basis for this book, we will strive to maintain a balance between the research evidence base and the situated knowledge of teachers. For example, the sections of each chapter on 'learning power' are greatly informed by meta-reviews of research and in particular by John Hattie's work on visible learning. In referring throughout this book to John Hattie's work, and other work based on research meta-review, we will be using the technical term 'effect size'. Research meta-reviews involve systematic selection of research studies and a collation of the evidence they provide. Effect size is a way of capturing the impact of an intervention and expresses the change in achievement of an 'experimental' group over a control group. So, for example, if one mathematics class experienced formative assessment intervention and the control class did not, then the difference in results of a standardised mathematics test could be used to calculate the effect size. An effect size of  $d = 0.8$  means that the score of an average person in the experimental class is higher than 79 per cent of students in the control class as seen in [Figure 1.2](#). It is possible to have a negative effect size, in which case the intervention is slowing the learning progress of the class. Hattie makes a reasonable argument that effect sizes of 0.4 or more are worthy of serious attention by educators and policy-makers (2012, p 14). For a lucid introduction to the nature and application of effect sizes, have a look at Robert Coe's explanation in [www.leeds.ac.uk/educol/documents/00002182.htm](http://www.leeds.ac.uk/educol/documents/00002182.htm). However, it is important to acknowledge the limitations of research meta-reviews, in particular, their selection of research studies that allow calculation of effect size (but which might nonetheless offer rich and nuanced

Effect Size	% of the control group who would be below the average person in the experimental (intervention) group
0.0	50
0.2	58
0.4	66
0.6	73
0.8	79
1.0	86
1.4	92
1.8	96
2.0	98
3.0	99.9

**Figure 1.2** A statistical interpretation of ‘effect size’

information about the effects of an intervention). While we value their powerful contribution to developing research-informed practice, and have taken on board the key messages of research reviews, we also value a wide range of approaches to educational research and in particular believe that mixed-methods studies and practitioner research, by and with teachers, make a critical contribution to knowledge creation and the development of effective practice.

### **Things to try**

- » *Reflect on, and try to write down, some of the key features of good teaching that represent the practical wisdom of teachers in your school. What kind of teaching is highly valued? What are the characteristics of teaching practice that are seen as excellent or ‘best practice’?*
- » *Consider to what extent teaching in your school appears to be ‘research-informed’, meaning that practice is based to some extent on public knowledge in the form of learning theory, research evidence or professional guidance texts. To what extent is critical engagement with public knowledge valued and seen as part of the normal work of teachers and school leaders?*

### **Using this book**

Newly armed with metaphors for learning as transmission and construction and for teachers’ professional learning as interplay, it is time to launch into the core chapters of this book.

There are five core chapters in this book and you might consider reading through them in a linear fashion. To some extent we have assumed this rather conventional approach and so we make some assumptions in later sections that you have already read through and reflected on the previous chapters. However, this book is not intended to be a simple matter of reading from start to finish, because if it is to achieve its aims then we need you to return to this book having tried to implement some of its ideas within your classroom teaching.

Each of the five core chapters is therefore to some extent designed as a stand-alone resource. You might be interested in developing a 'growth mindset' (Dweck, 2006) in yourself as a teacher or in your learners. In this case it would be worth engaging with and returning to [Chapter 2](#). If you feel a focus on developing your learners or yourself as questioning critical thinkers is important, then [Chapter 3](#) is worth a visit. However, if you are focusing on learning within a curriculum subject and are considering the planning of learning activities, then [Chapter 4](#) deserves your particular attention. For a focus on assessment and feedback, [Chapter 5](#) will be useful. If group work and collaborative learning are on your agenda, then [Chapter 6](#) is your next port of call.

As a teacher you will have some concern for the formal assessment of your practice and the professional judgements that colleagues and headteachers may make about your teaching. You will be partly focused on professional standards for teachers and on the official curriculum in your institutional and national context. You will also be keenly aware of quality assurance processes within your setting, including internal and external school inspection regimes and processes. This book is designed to help you develop as a teacher, but we focus unapologetically on learning and ask you to complete the task of mapping across to your particular policy framework and school context.

However you decide to work with this book, try not to rush through, unless you intend to return to it more slowly at a later date. In particular, we would encourage you to engage with the reflective tasks we have proposed and to interrupt your reading with practical activity in your classroom. Based on your reading you might try to make small changes in your practice and evaluate their impact. We have tried our best to keep this book concise and accessible, but each chapter covers a good deal of ground and will benefit from your full engagement, application to practice, rereading and reflective thinking.

As you experience the challenges of becoming a teacher, this book aims to provide a reassuring guide to let you know that your ambition to become a great and influential teacher is worthwhile, and to provide some key ideas and tools to support you on your journey. Capturing the imagination of young people, motivating them to a deep engagement with learning, encouraging them to embrace challenge and above all being willing to take risks so that your learners are able to find their own way of becoming and being – these ambitions have no easy tick list of technical solutions. They provide a worthy challenge for you in your developing career as an inspirational teacher.

## **Chapter 1 summary**

This first chapter has presented an overview of this book to prepare you for the five 'core' chapters. It has also introduced some basic learning theory in relation to your learners and to your own workplace learning.

## Learning power

- Metaphors for learning are useful and ‘transmission’ and ‘construction’ helpfully link to behaviourist and constructivist theories of how children and young people learn.
- High-quality constructivist learning is captured by Hattie’s idea of ‘visible learning’, meaning that the teacher sees learning through the eyes of the learner, and the learner becomes her own teacher.
- A 50:50 ratio of success to failure in learning activities is a good rule of thumb for a classroom where expectations are high for all learners, challenge is embraced by learners, the risk of failure is seen as fun and mistakes are an opportunity for learning.

## Teachers’ workplace learning

- The practical wisdom of teachers in a particular school seems to be all about ‘ways of working’ and ‘what works with our learners’, but in the background it does build on foundations of learning theory, research evidence, professional guidance and policy.
- The public, published, knowledge in the field of education foregrounds learning theory, research evidence, professional guidance and policy, but it is contested. There are multiple views on any particular issue, and one way of evaluating such public knowledge is to consider its relevance to practice in a particular school or classroom.
- It is helpful to consider teachers’ professional learning as ‘interplay’ between practical wisdom and public knowledge. This interplay involves power and working relationships and is affected by the value placed on different kinds of knowledge within your school.

## Taking it further

It is important to keep an eye on the big picture. These three books are recommended reading on the purpose of education and the expertise of teachers:

Biesta, G. J. J. (2011) *Good Education in an Age of Measurement: Ethics, Politics, Democracy*. Boulder, CO: Paradigm.

A concise, accessible but thought-provoking and scholarly book that argues for radical change in schooling to embrace its wider purposes beyond passing exams and preparing to join the workforce.

Claxton, G. (2008) *What’s the Point of School? Rediscovering the Heart of Education*. Oxford: OneWorld.

This accessible book provides a powerful argument for reform of schooling to focus on developing learner dispositions.

Eaude, T. (2012) *How Do Expert Primary Classteachers Really Work? A Critical Guide for Teachers, Headteachers and Teacher Educators*. Northwich: Critical Publishing.

A concise and accessible book about the expertise of good teachers and the way that they handle the complex, multiple and sometimes contradictory aims of education. It complements and extends the ‘teachers’ workplace learning’ sections of this book.

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