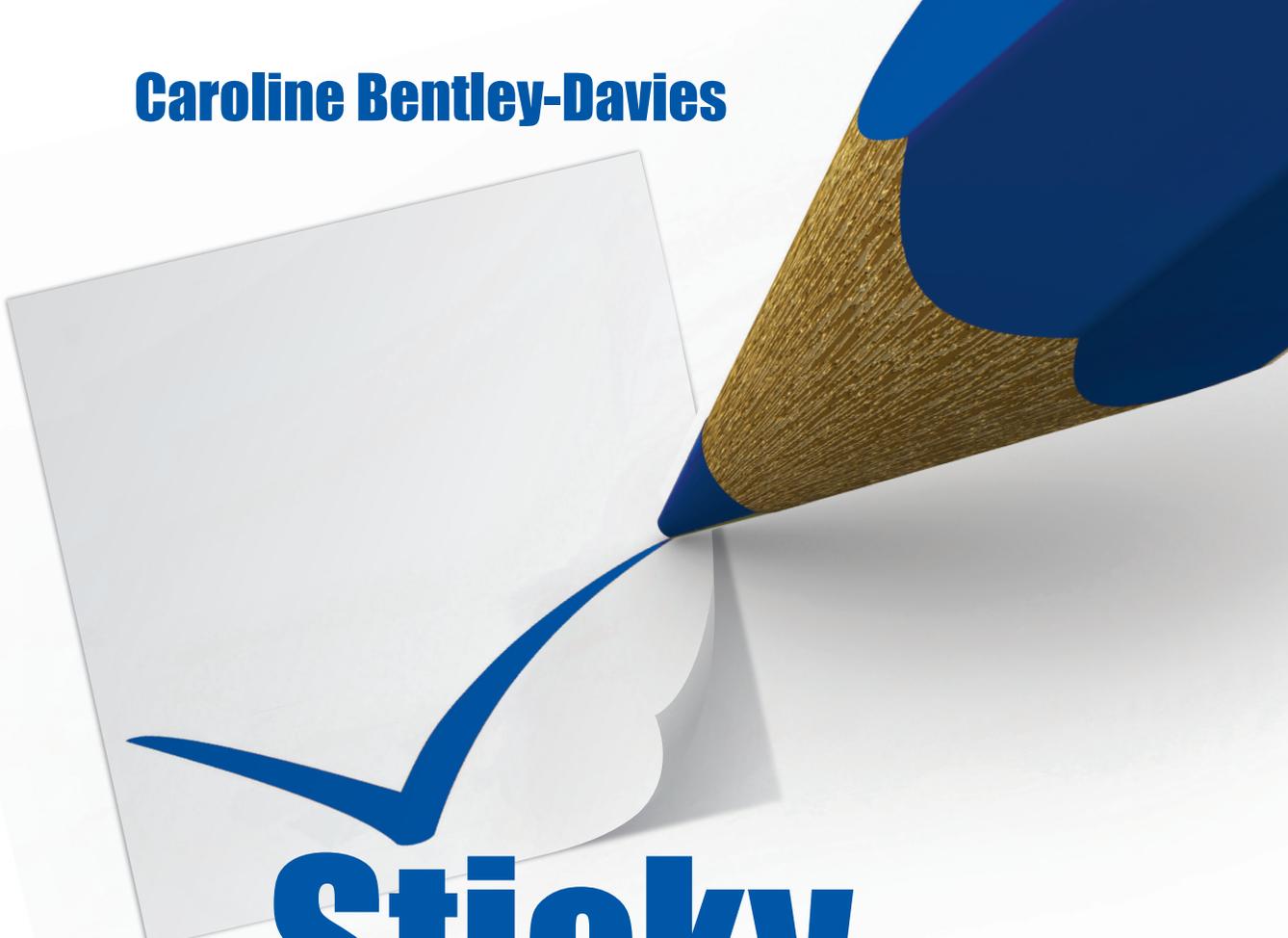


Caroline Bentley-Davies



**Sticky
Teaching
and Learning**

How to make your students remember what you teach them

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Preface

This book has come about for several reasons. I teach pupils and teachers in the UK and overseas, and I know it is important not just that I ‘feel’ my teaching has gone well but that it really influences my pupils. It matters that they remember and can draw on the learning in later lessons and in later life. I write training courses on all aspects of teaching and learning; however, recently teachers have been clamouring for training on how to help their pupils remember their lessons – essentially, how to make learning stick.

The need to make our teaching ‘sticky’ has never been greater. Coursework, once the fail-safe of the conscientious pupil, has gone. No longer can coursework or long-term assessments be carefully polished or redone if they are not deemed successful enough. Pupils are therefore increasingly reliant on their own ability to remember and utilise knowledge. Sometimes they will have been taught the course material over two years previously, but they still need to retain this information 24 months later at some speed and under immense pressure. We need to make knowledge sticky. Our pupils must be skilled at retrieving, shaping and utilising what we have taught them, so that in an assessment they can prove exactly what they know and can do. We can’t afford to sell them short.

There are other reasons why we want pupils to become successful at sticky learning. We want them to develop an appetite and aptitude for learning that will stay with them for the rest of their lives. We want them to enjoy learning and relish the challenge of mastering new skills and knowledge. We want to give them lifelong skills in developing successful learning strategies for themselves. As educators, there is an increasing rebellion against *just* preparing pupils for the demands of a specific test or examination. In some schools, in recent years pupils have been force-fed information, a foie gras approach to education if you like, a fail-safe for examination success.

These passive pupils are stuffed full of facts, information and enough pass notes to enable them to hurdle over the examination requirements with the minimum of effort. Countless revision sessions and notes are provided for pupils by their teachers. There is little expectation that they will develop any autonomy or the will to revise and learn for themselves or by themselves.

This wasn't the intention, of course. However, in increasingly accountable times teachers and school leaders have been under immense pressure to get results – at any cost. Of course, we want pupils to pass tests and become successful. However, the over-reliance of pupils on their teachers means that they become much less skilled at learning and thinking independently. Instead, they are increasingly reliant on their teachers' efforts, rather than their own. Ultimately, it doesn't work. It doesn't get the best results and it doesn't help to secure learning.

A classic example of the danger inherent in this practice occurred when I was observing some students in a school near Essex. The school was working incredibly hard to get them to achieve well in their examinations. I observed a hard-working teacher with one reluctant GCSE class. Her lesson was well prepared and she had excellent subject knowledge, but the students were sluggish and apathetic throughout the lesson. This was a crucial lesson: it covered essential learning points and reviewed some of the key material they would need for their examinations, which were just a few weeks away. However, when I challenged one lad about why he was not paying full attention and engaging with the activities, his reply was very telling: 'It's alright, Miss. We've got revision classes after school today and Miss will go through it all again.' The students knew that the lesson would be rerun like a Netflix episode, allowing for minimal mindless participation in the first instance. The students could allow it to wash over them because it would be repeated immediately after school! They didn't need to make any real effort with their learning.

One of the key premises of sticky teaching is that the initial learning in the lesson must actively involve pupils. They can't simply be passive observers.

Instead they must be active participants in the actual learning in the lesson. There are of course several advantages to this. Firstly, if pupils are active participants in their own learning, they are more likely to engage, remember and reflect on what they have learned. Moreover, when teaching pupils who are just unreceptive recipients of the teachers' knowledge, it is hard – if not impossible – to tell how much has been properly understood and retained. You can't tell what learning is insecure and will require revisiting and reteaching because the pupils have not grappled with the learning – they have just taken it in without question. In schools where pupils are docile in attitude, it is possible to teach like this; however, there is often an unpleasant surprise when results are received and some pupils have not done as well as expected. Their polite, biddable behaviour and compliance has covered up crucial misunderstandings and a lot of learning that was secure only at a surface level.

Finally, but importantly, teaching is a demanding and time-consuming profession. If we can do all we can to ensure the learning sticks during the initial teaching time, there will be much less need to increase our workload by replicating and repeating our lessons. Instead of running yet another revision session after school, we can use that valuable time to assess, feed back or plan more engaging and sticky lessons, so the learners engage and develop the tools to revise and secure learning for themselves.

Teaching is a career that is increasingly time pressured. This book provides a range of useful techniques designed to make learning and lessons as sticky as possible. You can just turn to these sections to receive a range of useful sticky, practical and pupil-tested classroom strategies in the Toolkit which forms the final two chapters of this book. These will enhance engagement and learning in any lesson. Your pupils will find that the learning sticks, and you will discover some new and engaging techniques nestling alongside others that you may have used before but be pleased to rediscover. However, some teachers will want to assure themselves of the research and background philosophy behind these strategies. For this reason, Chapters 1–9 cover the research philosophy and classroom realities behind the concept of sticky teaching and learning.

Research is important – after all, we don't want to fritter away time and energy on something that doesn't work or is just the latest in a line of teaching fads. However, each school is different. It has its own unique set of circumstances and contexts. Pupils and teachers within an individual school are also different. It is essential to be aware of this whenever we are seeking to improve and change our practice. On occasion, undigested research findings are trotted out as a panacea to cure all ills in a school. Unfortunately, it isn't as simple as that. I have briefly summarised some of the pertinent research in this book, but it is important that you think about this critically: the research implications must be appropriate to the context and needs of your pupils. Most of all, it is essential to be open-minded. If we are seeking to make specific improvements to the way we make learning sticky in our lessons, then we really need to trial new techniques, solicit feedback from pupils and ponder upon our findings for ourselves. For this to happen, there are 'thinking points' and suggested actions throughout the book to enable you to note down your thoughts and observations as you read – I do encourage you to do this.

I hope you enjoy *Sticky Teaching and Learning*. By reading and reflecting on these issues you will be well on the way to getting your pupils thinking and learning for themselves. Most importantly, you will be helping them learn how to make their learning stick and helping them develop crucial life skills – as well as obtaining the best set of examination results possible!

Most of all, relish it, try out the practical lesson ideas in the Toolkit with your students, in your school or college and talk to your pupils and fellow teachers to explore what is successful and has a real impact. Do let me know how you get on and what you find useful.

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Introduction

What Is Sticky Teaching and Learning and Why Does It Matter?

“ There is no learning without remembering.

Socrates (attrib.) ”

Metacognition and sticky teaching

Sticky teaching means teaching in a way that makes learning memorable. It aims to maximise pupils' ability to remember, recall and respond to what we have taught them. One dictionary definition of sticky as 'long lasting' suggests that it is important for the learning to persist. The intention is to make the learning experience as engaging and adhesive as possible, so the pupils get immersed in what they are doing and can recall the key learning later. However, sticky teaching is about more than just trying to make learning experiences engaging and unforgettable.

An underlying principle of sticky teaching is that pupils should be engaged in the thinking processes involved in what they are learning. This encourages them to use metacognition (thinking about the thinking and learning process for themselves) so they can reflect on how they found the learning activity, what helped or hindered them and how they might do it differently next time. Research shows that pupils who practise and develop their metacognitive skills make much better progress than those who don't. The ability to reflect and then tweak and adapt our next approach to learning is crucial in becoming an effective and resilient learner. The Education

Endowment Foundation's Teaching and Learning Toolkit summarises the effectiveness and cost of a range of different strategies designed to raise pupil achievement.¹ It cites metacognition as a top educational strategy: if managed effectively, it has a huge impact on improving pupils' learning, equivalent to, on average, eight months of pupil progress. Moreover, it is also relatively low in cost to implement in schools – important in these financially straitened times. Given the strong research pedigree of this approach, it is vital that our pupils' metacognitive skills are developed as early and as effectively as possible.

Developing pupils' metacognitive skills is vital on many different levels. We know that if pupils receive a range of interactive and effective learning experiences, then it is likely that they will engage and be more interested in what they are doing. This will help them to better remember and recall the ideas, understanding and key concepts that you are teaching because they are incredibly involved in the lesson. However, it is the ability to self-evaluate and reflect on their success in learning that makes for the most independent and successful learners. The skill of self-reflection is crucial in developing resilience towards learning, which in turn allows pupils to stand back and reflect on their own performance and consider how things can be improved next time. Good metacognitive practice allows pupils to think about how they have performed and why this might have been. It helps them work out how their learning strategies could be refined and improved for the next occasion. This clearly leads to better learning and greater success. It is a virtuous cycle.

When we think about our own past learning experiences, we can see how an emphasis on metacognitive skills might have helped us to achieve better outcomes. When I was at school, being encouraged to develop better self-reflection would have really helped my learning, certainly in the subjects where I struggled. For example, I remember starting French lessons as an excited 11-year-old. My motivation was extremely high because I was to be learning a new language. However, I had no prior experience in

¹ See <https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit>.

learning a language, so I had no previous strategies to draw on. Early on, I recall being given a long list of French vocabulary about different types of pets to learn over the weekend for a test on the following Monday. I started trying to memorise the list in a diligent fashion on the Sunday afternoon; however, I didn't do very well in the test, despite spending a lot of time staring at and rereading the words. I got the first word *lapin* quite effortlessly, *poisson rouge* (I remembered from previous colour vocabulary that *rouge* was red) but not many others. After the test and my poor results, I felt very disheartened. My excitement and motivation for learning French was fast disappearing. I had spent ages 'revising', but I still hadn't succeeded.

Did the teacher help us by discussing strategies to help us improve next time? No, she did not. Those of us who had gained fewer than half marks were told sternly that we would be retested in the next lesson – and woe betide us if we didn't improve. We know now that trying to cram in last-minute revision won't work as our working memory is soon overloaded.² We need to embed, revisit and review our learning across time to become successful learners. Although I had to study French up to GCSE, it is fair to say that I underachieved by at least one grade in the final examination. At no point in any of the lessons do I remember our teacher discussing different methods to help us learn vocabulary effectively. We weren't given a range of different techniques to experiment with and we certainly weren't encouraged to reflect after our tests on which revision and learning techniques worked for us and which didn't. This would have been so useful, not only in that specific test but for all vocabulary learning in French and a range of other subject areas. It would have allowed us, at a young age, to understand that there are different approaches for committing information to memory and that we could directly influence our own success by taking a particular approach to our revision.

2 See Centre for Education Statistics and Evaluation, *Cognitive Load Theory: Research That Teachers Really Need to Understand* (September 2017). Available at: <https://www.cese.nsw.gov.au/publications-filter/cognitive-load-theory-research-that-teachers-really-need-to-understand>.

Most importantly, we would have realised that we had control over our learning and that our failures weren't absolute. We could learn from them and do better next time. We should have been encouraged to be reflective, to think about how we would alter our strategies for the next time we were asked to learn a vocabulary list, write an essay or revise for an exam. Instead, we came to the quick realisation that a few classmates appeared to get top marks effortlessly and others didn't (no matter how long they stared at a sheet of words). As you can imagine, if you weren't a top scorer this was very demotivating. How immensely helpful it would have been to discuss tactics with each other: what revision techniques had we used? How successful or otherwise had we found them? What would we adapt for next time? It certainly would have helped to maintain learner enthusiasm and resilience, because if you were less successful in a test you would be encouraged to reflect on the reasons behind this. Could you have used a different technique to revise? Perhaps leaving all your revision to the morning of the test wasn't the best approach. Would making flashcards or listening to your speech recorded onto your phone help you? What technique did your partner use that helped them to improve their marks from the last test? What helped you to do better than your last test? You get the picture.

Building resilience is crucial for students. We certainly don't always succeed first time as adults, and nor should we. If we are setting ourselves appropriately challenging goals, there will undoubtedly be false starts and we will need to make amendments and adjustments to our approach. Resilience is important not just for passing tests but for building a successful life. Everybody faces setbacks, so it is necessary to have the right strategies to respond to them constructively. To create effective learners, it is essential that we help them to develop and hone these skills, and ultimately to own them for themselves. Across a student's total school experience, it is likely that they will sit 500 or more tests, assessments or examinations. A typical student will experience a minimum of one test or exam per school week (often many more!), even if it is just a quick spelling or maths test. If you are reading this book as an educator, you will have been at least moderately if not highly successful in passing tests, learning and all that it

entails. But imagine for a moment that you weren't. How long after receiving repeatedly poor test marks would you have wanted to give up? If you didn't have successful strategies and the know-how to alter your approach to learning and feedback, then it is likely to have been very soon indeed.

The outlook isn't all smooth sailing for those brilliant 11-year-old test-takers either. Some students who start out as high achievers, who pass GCSE examinations with the minimum of effort, seem to struggle post 16. They find the challenging demands of A level or higher education an unpleasant shock. After all, they succeeded effortlessly in earlier years, so they have never had to grapple and find strategies to deal with these setbacks before. Consequently, these individuals often underachieve and lose motivation at these crucial stages in their education. The problem? They have not mastered how to struggle and strive without sinking. They have not learned how to review, adapt and adopt different strategies with their learning. They have previously found success without having to try all that hard. They have not developed resilience because they have not mastered metacognition or self-regulation (the ability to self-motivate). The implications for this are serious for these individuals, who may lose motivation and end up underachieving in school and in later life.

For the moment, flex those metacognitive muscles yourself and take time for a thinking point.

Thinking point

- When did you last learn something new that you found challenging?
- How did you feel about learning it?
- What strategies helped or hindered you? What motivated or demotivated you?

- In your lessons, do you discuss and give pupils examples of strategies to help them revise and consolidate their learning?
- Do you encourage pupils to reflect on, adapt and review their strategies and their effectiveness?
- Do you encourage pupils to share their successful approaches with each other?
- Do you explicitly discuss metacognition and its importance in improving learning with pupils?
- What do your pupils find effective in helping them to learn and secure new learning?
- What topics or concepts might they need more help with to make the learning stick?

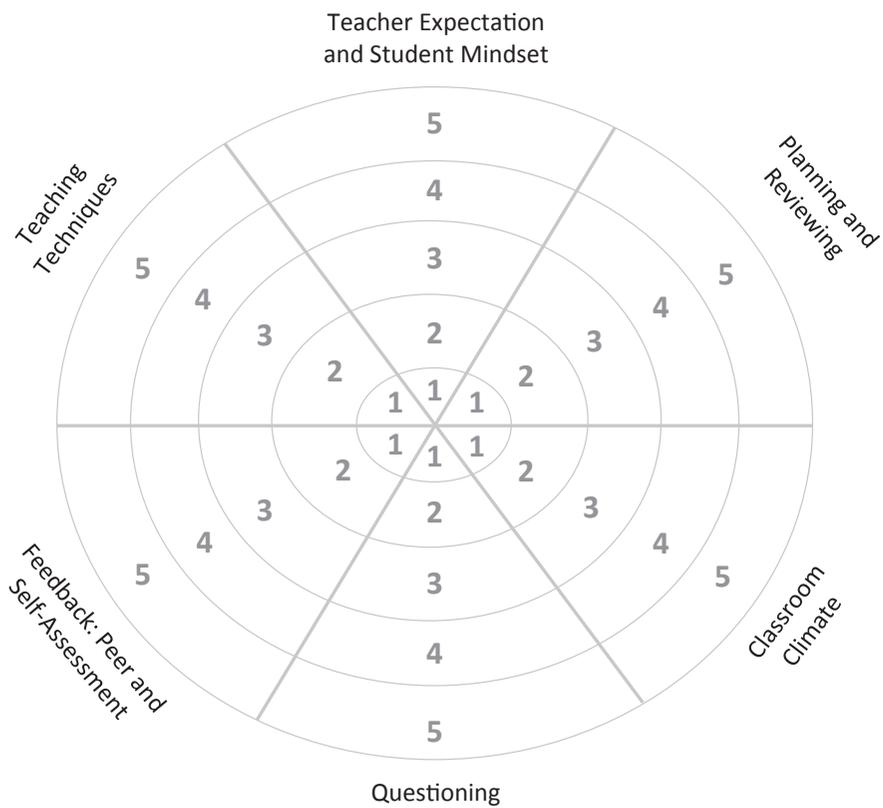
What this book will do for you

This book will guide you through some teaching methods and practical strategies to develop more resilient and effective learners and, most importantly, it will help to ensure that what you teach really sticks. Chapters 1 to 9 explain and unpick the key aspects of teaching that contribute to effective long-term learning. By examining the crucial roles that teacher expectation and pupil mindset play in developing resilient learners, we will explore how you can influence pupil effort and improve outcomes. Chapter 1 discusses how to foster the attitudes and skills that make this possible. This is developed in Chapter 2, which considers the significance of the classroom climate in encouraging learner independence and examines the impact of the emotional and physical environment on promoting individual competence and self-reliance. The importance of planning as a foundation to great long-term retention is reviewed in Chapter 3, first by

looking at the planning of individual lessons and then highlighting some common pitfalls. The impact of retrieval practice in planning is considered in Chapter 4, and we look at how to improve memory and performance. Chapter 5 underlines the consequence of this in a case study from a real GCSE revision class. Chapters 6 to 9 examine various teaching approaches for developing pupils' understanding and knowledge and how to make these more effective in retaining learning. These are linked to questioning and feedback in its various forms: the skills of questioning in Chapter 6, why we need to engage with getting things wrong in Chapter 7, the impact of effective feedback on learning in Chapter 8, and the power of peer and self-assessment in Chapter 9.

In the Toolkit, you will find 50 engaging and tried-and-tested teaching techniques that will enthuse and inspire your pupils to first think carefully and to engage with and embed learning. The Toolkit is divided up between classroom teaching techniques, which will help to make learning stick, and quick plenary ideas to help check on the success of this. They are all designed for maximum participation so there are no passengers sitting it out on the sidelines. This is a crucial part of the success of the sticky teaching approach. These activities are all underpinned by Bjork's maxim of 'desirable difficulty' – that making the learning and reviewing challenging is critical to ensuring retention.³ Finally, there is a bibliography, because this is a book for the busy classroom teacher and therefore touches only lightly on the research.

3 Elizabeth L. Bjork and Robert Bjork, Making Things Hard on Yourself, But in a Good Way: Creating Desirable Difficulty to Enhance Learning. In Morton Gernsbacher, Richard Pew, Leaette Hough and James Pomerantz (eds), *Psychology and the Real World: Essays Illustrating Fundamental Contributions to Society* (New York: Worth, 2009), pp. 56–64.



The wheel of sticky teaching

Chapter 1

The Sticky Classroom: Teacher Expectations and Student Mindsets

“ When we take people ... merely as they are, we make them worse; when we treat them as if they were what they should be, we improve them as far as they can be improved.

Johann Wolfgang von Goethe, tr. Thomas Carlyle,
Wilhelm Meister's Apprenticeship and Travels ”

The six areas of sticky teaching

To make learning stick successfully there are six important areas that must work together effectively: teacher expectation and student mindset, planning and reviewing, classroom climate, questioning, feedback (peer and self-assessment) and teaching techniques. The wheel of sticky teaching on page 8 shows these six key areas.¹

The bands within the circle are labelled from 1 to 5, with 5 being the zone of most effective or confident practice and 1 the zone of least proficiency. Use the wheel as a self-reflection tool to evaluate how effectively you feel you are working in each area. For example, in the *classroom climate* segment, a score of 5 would indicate that this area is operating brilliantly: the students are taking responsibility for developing aspects of their own learning, they

¹ An electronic copy of the wheel can be accessed from my website: www.bentley-davies.co.uk.

are skilled at self-reviewing their work and they are effective independent learners. The classroom and the physical environment would also strongly support this. In contrast, a score of 1 would indicate that the students are overly dependent on the teacher and that they might resist being asked to think for themselves. The resources in the classroom to support this area would also underdeveloped.

Have a look at the wheel and think about where you might be currently for each of these areas. Of course, it isn't the specific number that matters, but the reflection about each area that it encourages. We will be considering each of the six areas in detail, so if you feel one area is less developed than the others, then the specific chapter related to it will help you to find strategies to boost your score. Clearly, the six segments of the wheel are interconnected – learning won't be successfully sticky if you spend all your energy on one segment to the detriment of the others. This is because they impact on each other, as we shall see when we discuss each segment of the wheel and unpick what success looks like for each individual area.

Teacher expectations for effective sticky learning

As we unpack this a little more, you will see that *teacher expectation and student mindset* is right at the top of the wheel. This is because both are crucial in making learning stick. Pupils take their lead from the teacher, and there are countless ways that they can tell whether or not you believe in them. Pupils can spot whether you think they will complete a task to the best of their ability – if you think they have the skills to succeed – or whether, if they push back and behave in a resistant way, you might just give in and let them off that learning activity by providing the answers for them or accepting their below par efforts. Pupils often test you. They know that if they are 'difficult' or reluctant, you are less likely to force them to complete challenging tasks. They know they can get away with more and this will mean an easier time for them in lessons.

A toolkit of practical strategies designed to make learning as 'sticky' as possible for students.

Teacher trainer and revision expert Caroline Bentley-Davies addresses the key challenges encountered by educators who are seeking to make learning more memorable. She identifies the teaching techniques that contribute most effectively to successful long-term learning, then explores how these benefit students by leading to greater independence and better exam performance.

The practical approaches, proven in real classrooms, are underpinned by a blend of research, theory and metacognition in action.

Suitable for all teachers and senior leaders looking to improve their students' learning, skills and independence.



Caroline's non-patronising explanations outline key ideas with clarity, bringing the concept of sticky teaching and learning to life.

Humphrey Waddington, Assistant Head Teacher, North London Collegiate School

Caroline Bentley-Davies provides startling insights and thoughtful perspectives on evidence-based techniques for improving retention and recall and securing learning by locking knowledge into the long-term memory bank so that pupils' learning lingers. Caroline's voice is wonderfully energetic, engaging and mercifully free of educational gabble. Needless to say, this book really stuck with me!

Sarah Martin, School Improvement Adviser and Director of Teacher Education, The Active Learning Trust

In *Sticky Teaching and Learning*, Caroline shares her experience of teaching and promotes the autonomy, independence and rights of children to be learners.

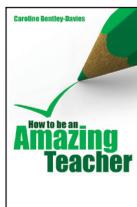
Christian N. Kendall-Daw, Deputy Head Teacher, St George's Weybridge

Making the precious curriculum content we have delivered stick is the thing we all crave – and this book enable us, as teachers, to do just that.

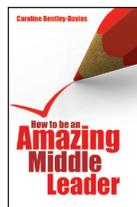
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Caroline Bentley-Davies is an adviser, consultant and coach for teachers and school leaders. She runs training and observes lessons across the UK and overseas. She has trained thousands of teachers and is the author of many bestselling books, including *How to be an Amazing Teacher* and *How to be an Amazing Middle Leader*.



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