Chapter 3 Strategy 1: Clarifying, Sharing, and Understanding Learning Intentions
For our mothers, Iona and Heather
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Dylan Wiliam is a professor emeritus of educational assessment at University College London. After a first degree in mathematics and physics, and one year teaching in a private school, he taught in urban schools for seven years, during which time he earned further degrees in mathematics and mathematics education.

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Over the past fifteen years, Wiliam’s work has focused on the profound impacts of embedding classroom formative assessment on student learning. In 1998 he coauthored, with Paul Black, a major review of the research evidence on formative assessment, together with a guide to the research for policy makers and practitioners, entitled Inside the Black Box. This booklet and subsequent booklets on formative assessment for practical application in the classroom and to individual subject areas are available from LSI. He is the author of Embedded Formative Assessment and coauthor, with Siobhán Leahy, of the Embedding Formative Assessment Professional Development Pack (now available in North America). Dr. Wiliam’s Leadership for Teacher Learning is also forthcoming from Learning Sciences International in summer 2015.
Siobhán Leahy, MS, was a principal of three secondary schools for seventeen years. She has extensive practical experience in using teacher learning communities to embed classroom formative assessment and has worked with educators in the United States, the United Kingdom, and Australia on how to support teachers in developing their classroom practice. She is coauthor and developer, with Dylan Wiliam, of the Embedding Formative Assessment Professional Development Pack. She received her master of science from South Bank University, London, and her bachelor of science in management sciences from the University of Warwick, in the United Kingdom.
Introduction

We wrote this handbook to support individual teachers who want to improve their classroom practice by using formative assessment techniques. Previously we had designed a pack for schools to support their teachers by introducing formative assessment through teacher learning communities (two years of monthly meetings), but we realized that there must be many teachers who would like to develop their practice on their own or with a small group of colleagues. This book is for you.

*Embedded Formative Assessment*, published by Solution Tree in 2011, summarizes several strands of research evidence that show classroom formative assessment is a powerful lever for changing practice. Indeed, as far as we know right now, there is nothing else that has a greater effect. Although *Embedded Formative Assessment* contains a number of practical classroom-tested techniques for implementing formative assessment, much of the book deals with an analysis of research studies on feedback and other aspects of formative assessment, in particular exploring what the research does—and, just as importantly, does not—show. In other words, *Embedded Formative Assessment* is concerned with making the case for formative assessment—both in terms of the “why” and the “what”—as well as providing suggestions for how to get started.

This book is more focused on the practicalities of implementing, and sustaining, the development of formative assessment in classrooms. You may have read *Embedded Formative Assessment* and would like a few more ideas about practical techniques that you can use in your classroom to develop your practice of formative assessment. On the other hand, you may not have read *Embedded Formative Assessment* but are convinced by the research on formative assessment, and just want to “cut to the chase.” If you need a review of formative assessment, there is a summary in this book.

Another difference is that in *Embedded Formative Assessment* the practical techniques are presented in a list at the end of each chapter, with no attempt to relate the techniques to each other. Here, we try to group similar techniques together, drawing out their similarities, which should make it easier for you to see how to modify and adapt them for your classroom.

As well as providing practical ideas for classroom formative assessment, this book makes suggestions for how you can work with others to gain support for the difficult work of
changing practice. If you have a group of teachers already keen to work together on these ideas, we suggest that you use the *Embedding Formative Assessment Professional Development Pack* (Wiliam & Leahy, 2014), which provides everything a building needs for two years of professional development focused on classroom formative assessment, with teachers working collaboratively in teacher learning communities. However, if you are on your own, or there are only two or three others who want to work on these ideas in your school, this book provides some practical ideas for how you can get the best support from your colleagues. We have placed this discussion of your own professional learning before the chapters on the five key strategies of formative assessment because it is valuable to think about the challenges involved in changing your classroom practice before you decide which specific techniques you will use.

We hope that this book gives you the structure to take small steps, engage your students in their own learning, and increase their achievement. You might find it useful to use highlighters or page flags/self-adhesive notes to traffic light the techniques as you read about them. For example, use green for “I already use this technique,” yellow/orange for “I will try to use this technique,” and pink for “I will not use this technique.” We encourage you to write all over this book in whatever way will be of most use to you. We also provide a sample letter to parents that you might want to send home (with an administrator’s approval) to let parents know when you are changing your classroom practice.

Before you start you might want to complete a sheet with the formative assessment techniques you already use in your classroom (provided at the end of this introduction), and also ask your students to complete the *student reflections on learning survey* and/or the *student feedback to teacher survey* (both at the end of this book) so that you have a baseline to compare your classroom practices in, say, six months’ time.

At several points in the book, we include quotations from students who participated in a reality TV show entitled *The Classroom Experiment*. This was the result of a project in which Dylan persuaded some seventh-grade teachers to try out a few of the techniques we describe in the book. A TV crew followed the students around every day for fifteen weeks, and the resulting 120 hours of video were edited down to two one-hour episodes shown on consecutive evenings during prime time on network TV in the United Kingdom (Barry & Wiliam, 2010; Thomas & Wiliam, 2010). While a venture like this would not qualify as formal research, we think that the voices of the students make such important points about their learning that they are worth including.

This book contains the following:

- An introduction to the five strategies of formative assessment, for those who either have not read Dylan’s book or want to remind themselves about this.
- A section on the professional learning that teachers need in order to increase learning outcomes for students.
• Each of the five strategies, containing research background, techniques, and other suggestions, presented as individual chapters:
  • Strategy 1: Clarifying, sharing, and understanding learning intentions
  • Strategy 2: Engineering effective discussions, tasks, and activities that elicit evidence of learning
  • Strategy 3: Providing feedback that moves learners forward
  • Strategy 4: Activating students as learning resources for one another
  • Strategy 5: Activating students as owners of their own learning

• Consistent end-of-chapter structure:
  • A recap
  • A reflection checklist
  • An action planning form
  • A peer observation form

• Reproducibles you might want to use more than once:
  • Reflection checklist for each of the five strategies
  • Action planning form
  • Peer observation form
  • Student survey
  • Student feedback to teacher survey
  • Learning log
  • Student reflections on learning survey
  • Example of a letter to parents

• Conclusion
• Appendix on effect sizes
• References

We advise you to note here the techniques that you regularly use. You can then compare this with the techniques that you are regularly using once you have read this book and trialed many of the techniques.
## THE TECHNIQUES I REGULARLY USE

<table>
<thead>
<tr>
<th>Clarifying, sharing, and understanding learning intentions and success criteria:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering effective discussion, tasks, and activities that elicit evidence of learning:</td>
</tr>
<tr>
<td>Providing feedback that moves learning forward:</td>
</tr>
<tr>
<td>Activating students as learning resources for one another:</td>
</tr>
<tr>
<td>Activating students as owners of their own learning:</td>
</tr>
<tr>
<td>Other techniques:</td>
</tr>
</tbody>
</table>
Chapter 1

WHY FORMATIVE ASSESSMENT SHOULD BE A PRIORITY FOR EVERY TEACHER

The term *formative assessment* has been around for almost fifty years, but as yet, there is little consensus as to what it means. Some people suggest using *assessment for learning* instead (Broadfoot et al., 1999), but that merely moves the burden of definition—a little like stamping on a bulge in a carpet only to find that it reappears somewhere else. Others have tried to make sure that *formative assessment* is used only to describe educational practices of which they approve—essentially trying to make *formative assessment* synonymous with *good assessment*.

We think that particular boat has sailed. People do, and will continue to, use the term formative assessment in whatever way suits them. Those who want to sell tests may well describe their tests as formative assessments, and those who advocate regular monitoring of student progress through common assessments will describe these assessments as formative. That is why we think there is little value in trying to define formative assessment in a restrictive way that includes a usage with which people may disagree. People aren’t going to change the way they use terms because others disagree with them.

What we do think is valuable, however, is to understand the differences in the way that people use the term formative assessment so that we stop worrying about whether an assessment is formative and instead think about whether it will help our students learn more.

That said, there is one issue we think should not be a matter of debate, and that is whether formative assessment is a process or a “thing.” Many people talk about formative assessment in the plural (i.e., formative assessments), and we think that this doesn’t make any sense, because the same assessment can be used formatively or summatively. For example, a teacher sets some practice tests for a class preparing for a state test. If the teacher scores the test, it provides information about which students have learned the material being tested and which have not. If all that happens is the scores get recorded in a grade book, the test is functioning summatively.

That the test is serving only a summative function is not necessarily a bad thing. There is now a substantial body of research that shows regular testing increases student
achievement by improving students’ abilities to retrieve things from memory (P. C. Brown, Roediger, & McDaniel, 2014) and reducing anxiety (see, for example, Agarwal, D’Antonio, Roediger, McDermott, & McDaniel, 2014).

If the teacher stopped there, while the activity would be valuable, we do not think it would make sense to call this process formative. Students would learn more as a result of the practice testing, but the results of the assessment would not “form” the future direction of their learning (indeed, the benefits of practice testing occur even if the test is never graded).

However, the test scores might also indicate to the teacher which students need additional support, allowing her to help the students who need it most. By helping the teacher make a smarter decision about the allocation of her time, the test results would form the direction of the students’ learning. Even better, if the teacher were able to see that the errors a student made on the test indicated a specific misunderstanding, the assessment might help the teacher provide more specific feedback to the student. For example, the teacher might notice that a student doing multi-digit subtractions consistently subtracted the smaller digit from the larger, irrespective of whether it was in the minuend (the number being subtracted from) or the subtrahend (the number being subtracted):

\[
\begin{array}{c}
9 & 2 & 1 \\
- & 5 & 7 & 3 \\
4 & 5 & 2
\end{array}
\]

This would give the teacher a clear plan of action about what to suggest to the student in order for him to improve his work. In other words, the same assessment can serve both a summative purpose (telling the teacher how good the student is at arithmetic) and formative one (telling the teacher what to do next).

This is why we think that it does not make sense to talk about formative assessment in the plural. Any assessment can function formatively or summatively. Some assessments are better suited to serve a formative function, and others are better suited to serve a summative function, but the important point is that the formative/summative distinction makes most sense when it is applied to the evidence an assessment generates, and the use to which it is put, rather than the assessment itself.

As noted earlier, there are many different approaches to defining formative assessment and assessment for learning (for a reasonably comprehensive review, see Wiliam, 2011b). However, there appear to be four main points of difference in the various definitions that various authors propose:

1. The amount of time that elapses between the collection of the evidence and the impact on instruction
2. Whether it is essential that the students from whom evidence was elicited are beneficiaries of the process
3. Whether students have to be actively engaged in the process
4. Whether the assessment has to change the intended instructional activities

We discuss each of these briefly in turn here:

1. *Time between evidence collection and use.* Perhaps the most common approach to formative assessment in US schools involves the use of what are sometimes called *common formative assessments* [sic]. The idea is that teachers meet to construct or select assessments that faithfully represent the learning intentions they have adopted for their students, and the assessments are then administered to all the students in a particular grade in the building, and, sometimes, across the whole district. Once the assessments are scored, teachers meet to review their students’ performance, check on any students who are not making the expected progress, and decide what steps to take to ensure that all students are making the necessary progress. This process does lead to increased student achievement (Gallimore, Ermeling, Saunders, & Goldenberg, 2009; Saunders, Goldenberg, & Gallimore, 2009), but some authors argue that the length of time between evidence collection and action being taken is far too long.

2. *Do the assessed students benefit?* Some authors argue that to be formative, the students from whom assessment evidence was collected have to be beneficiaries of the process. In other words, if you learn something teaching a period one class that you use to improve the teaching of the same lesson to a period two class, authors would not regard that as formative assessment, because the students from whom the data were collected (the period one class) are not direct beneficiaries of the process.

3. *Do students have to be actively engaged in the process?* Many teachers ask students to complete an “exit pass” toward the end of a lesson, in which the students are asked to respond to a question on a three-by-five-inch index card and hand them in to the teacher as they leave the classroom at the end of the lesson. Some teachers insist that students write their names on the reverse of the exit passes so that the teacher can provide feedback (although it seems to us that if the teacher is going to provide individual feedback on the work, the students may as well have written their responses in a notebook). Other teachers do not require students to write their names on the back of the exit passes, because the focus is on the learning of the whole class. The reason the teacher asks for the exit passes is to help her make a decision about the learning of the students as a group and decide where to begin the next lesson. For some teachers, the fact that students do not get any personal, individual feedback is a problem. For others, the fact that the teacher used and elicited evidence of student achievement to improve instruction is enough. We discuss the use of exit passes in more detail in Chapter 4.

4. *Does the evidence have to change the planned instruction?* Many authors argue that the essence of formative assessment is that the evidence collected must somehow improve the instruction, but there are occasions where the evidence collected does
not change the instruction but merely confirms that the teacher’s intended course of action was appropriate. For example, if the exit pass responses confirm that all the students understood the content of the lesson, the teacher would move on. The decision to move on is now based on evidence about the students’ understanding rather than a hunch, or students self-reporting that they understood—for example, by showing “thumbs up.”

We could fill the rest of this book with a discussion of the relative merits of the different views about what is and what is not formative assessment, but it seems to us that it would not be particularly fruitful. People would still disagree and continue to “talk past” each other by using the term formative assessment in different ways. For this reason, we believe that it is best to cut through all the debate and accept that people will continue to use the term in whatever way suits them, and adopt an inclusive rather than exclusive definition. To this end, we think it is appropriate to adopt the inclusive definition of formative assessment Black and Wiliam (2009) propose, in which they define assessment as being formative:

_to the extent that evidence about student achievement is elicited, interpreted, and used by teachers, learners, or their peers, to make decisions about the next steps in instruction that are likely to be better, or better founded, than the decisions they would have taken in the absence of the evidence that was elicited._ (p. 9)

Black and Wiliam draw out a number of consequences of this definition:

1. Anyone—teacher, learner, or peer—can be the agent of formative assessment.
2. The focus of the definition is on decisions. Rather than a focus on data-driven decision making, the emphasis is on decision-driven data collection. This is important because a focus on data-driven decision making emphasizes the collection of data first without any particular view about the claims they might support, so the claims are therefore accorded secondary importance. By starting with the decisions that need to be made, only data that support the particular inferences that are sought need be collected.
3. The definition does not require that the inferences about next steps in instruction are correct. Given the complexity of human learning, it is impossible to guarantee that any specified sequence of instructional activities will have the intended effect. All that is required is that the evidence collected improves the likelihood that the intended learning takes place.
4. The definition does not require that instruction is in fact modified as a result of the interpretation of the evidence. The evidence the assessment elicited may indicate that what the teacher had originally planned to do was, in fact, the best course of action, as we saw with the earlier exit pass example. This would not be a better decision (since it was the same decision
that the teacher was planning to make without the evidence), but it would be a better founded decision.

We feel there are two further consequence of this definition that are worth noting. The first is that formative assessment is applicable across the age range. It works equally well with five-year-olds and twenty-five-year-olds (and indeed eighty-five-year-olds!). The second is that formative assessment is curriculum neutral. The way we define formative assessment is completely independent of what students are learning. All formative assessment requires is that you are clear about what you want your students to learn, because if you are not, you don’t know what evidence to collect, let alone how to help your learners. This is important because many writers try to use formative assessment to support a particular view of what students should be learning in school. For us, formative assessment arises as a consequence of the fact that students do not always learn what we teach, and we had better find out what they did learn before we try to teach them anything else.

And this is why we are convinced that formative assessment is not just the latest fad in education. For any teacher, examining the relationship between “What did I do as a teacher?” and “What did my students learn?” is always the most powerful focus for reflecting on your practice, for as long as you continue to do the job.

Now that we have defined formative assessment we can look in detail at what kinds of formative assessment have the biggest impact on student learning. In other words, rather than arguing about which particular approaches to classroom assessment deserve the qualifier “formative,” we instead ask whether learning is improved, and if so, by how much, and this is where the research evidence comes in.

Over the past thirty years, many reviews of the research on feedback and other aspects of formative assessment have been published, and these are summarized in Table 1.1. You can find a summary of the most important findings in Wiliam (2011b), and many are discussed in the following five chapters. However, the most important takeaway from the research is that the shorter the time interval between eliciting the evidence and using it to improve instruction, the bigger the likely impact on learning. Using formal testing to monitor student achievement and make instructional adjustments on a month-to-month basis—what might be called “long-cycle” formative assessment (Wiliam & Thompson, 2008)—can improve achievement, but the effects are generally small. Getting students more involved in their own assessment so that they understand what they need to do to succeed week to week—that is, “medium-cycle” formative assessment—is also helpful. But the biggest impact happens with “short-cycle” formative assessment, which takes place not every six to ten weeks but every six to ten minutes, or even every six to ten seconds.
### Table 1.1: Reviews of Research on Feedback and Other Aspects of Formative Assessment

<table>
<thead>
<tr>
<th>Study</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuchs and Fuchs (1986)</td>
<td>Formative assessment, focusing on students with special educational needs (21 studies)</td>
</tr>
<tr>
<td>Natriello (1987)</td>
<td>Formative and summative assessment procedures and their impact on students (91 studies)</td>
</tr>
<tr>
<td>Crooks (1988)</td>
<td>Classroom assessment practices and their impact on students (241 studies)</td>
</tr>
<tr>
<td>Bangert-Drowns, Kulik, Kulik, and Morgan (1991)</td>
<td>Feedback in “test-like” events such as end-of-chapter quizzes (40 studies)</td>
</tr>
<tr>
<td>Dempster (1991, 1992)</td>
<td>Classroom tests and reviews (56 studies) and issues of implementation</td>
</tr>
<tr>
<td>Elshout-Mohr (1994)</td>
<td>Feedback in self-directed learning (including studies published only in Dutch)</td>
</tr>
<tr>
<td>Kluger and DeNisi (1996)</td>
<td>Feedback in schools, colleges, and workplaces (131 studies)</td>
</tr>
<tr>
<td>Black and Wiliam (1998a)</td>
<td>Formative assessment in K–12 education</td>
</tr>
<tr>
<td>Nyquist (2003)</td>
<td>Feedback and other aspects of formative assessment with college-age students (187 studies)</td>
</tr>
<tr>
<td>Allal and Lopez (2005)</td>
<td>Review of research studies on formative assessment published only in French</td>
</tr>
<tr>
<td>Köller (2005)</td>
<td>Review of research studies on formative assessment published only in German</td>
</tr>
<tr>
<td>Wiliam (2007b)</td>
<td>Review of studies on formative assessment in mathematics education</td>
</tr>
<tr>
<td>Hattie and Timperley (2007)</td>
<td>Extended review of research on feedback</td>
</tr>
<tr>
<td>Shute (2008)</td>
<td>Review of research specifically focused on intelligent tutoring systems</td>
</tr>
<tr>
<td>Andrade and Cizek (2010)</td>
<td>Handbook of research on formative assessment</td>
</tr>
<tr>
<td>McMillan (2013)</td>
<td>Handbook of research on classroom assessment</td>
</tr>
</tbody>
</table>

Go to www.learningsciences.com/bookresources to download figures and tables.
Of course the definition of formative assessment we gave earlier provides little guidance about how to implement effective classroom formative assessment, and in particular what it looks like in practice. To address this, Leahy, Lyon, Thompson, and Wiliam (2005) propose that formative assessment could be conceptualized as the result of crossing three processes (where the learner is going, where the learner is right now, and how to get there) with three kinds of agents in the classroom (teacher, peer, learner), as shown in Table 1.2.

The resulting model identifies the five key strategies of formative assessment. The first—clarifying, sharing, and understanding learning intentions and success criteria—deals with the joint responsibility of teachers, the learners themselves, and their peers to break this down into a number of criteria for success. The second strategy deals with the teacher’s role in finding out where learners are in their learning, once he is clear about the learning intentions (this sequence is deliberate—until you know what you want your students to learn, you do not know what evidence to collect). The third strategy emphasizes the teacher’s role in providing feedback to the students that tells them not only where they are but also what steps they need to take to move their learning forward. The fourth strategy emphasizes the role that peer assessment can play in supporting student learning and also makes clear that the purpose of peer assessment within a formative assessment framework is not to judge the work of a peer so much as to improve it. Finally, the fifth strategy emphasizes that the ultimate goal is always to produce independent learners.

<table>
<thead>
<tr>
<th>Where the learner is going</th>
<th>Where the learner is now</th>
<th>How to get there</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher</td>
<td>Clarifying, sharing, and understanding learning intentions and success criteria</td>
<td>Engineering effective discussions, tasks, and activities that elicit evidence of learning</td>
</tr>
<tr>
<td>Peer</td>
<td>Activating students as learning resources for one another</td>
<td></td>
</tr>
<tr>
<td>Learner</td>
<td>Activating students as owners of their own learning</td>
<td></td>
</tr>
</tbody>
</table>

In the five main chapters of this book, we discuss each of the strategies in more detail. If you are familiar with *Embedded Formative Assessment* (Wiliam, 2011a) the structure will be familiar to you, for the simple reason that what we see as the five key strategies of formative assessment haven’t changed. However, as noted in our introduction, while we do cite some research studies in these five chapters, the focus is much more on the practicalities of implementing the strategies in your classroom. In doing so, each chap-
ter follows the same basic pattern. We outline the key ideas behind the strategy and then go into more detail, providing a number of practical techniques that are ready for classroom implementation. While *Embedded Formative Assessment* lists a number of techniques (fifty-three in fact!), these were presented without much explanation. Here, we provide a number of tips for effective implementation and some ideas for how the techniques can be varied or enhanced. We also discuss a number of potential pitfalls in the implementation of these techniques that we have found in our work with teachers over the past few years.