VISIBLE LEARNING FEEDBACK
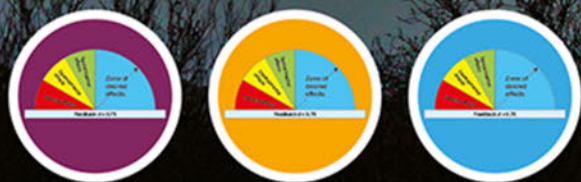
JOHN HATTIE and SHIRLEY CLARKE

Visible Learning: Feedback

Feedback is arguably the most critical and powerful aspect of teaching and learning. Yet, there remains a paradox: why is feedback so powerful and why is it so variable? It is this paradox which *Visible Learning: Feedback* aims to unravel and resolve.

Combining research excellence, theory and vast teaching expertise, this book covers the principles and practicalities of feedback, including:

- the variability of feedback,
- the importance of surface, deep and transfer contexts,
- student to teacher feedback,
- peer to peer feedback,
- the power of within lesson feedback and manageable post-lesson feedback.

With numerous case studies, examples and engaging anecdotes woven throughout, the authors also shed light on what creates an effective feedback culture and provide the teaching and learning structures which give the best possible framework for feedback.

Visible Learning: Feedback brings together two internationally known educators and merges Hattie's world-famous research expertise with Clarke's vast experience of classroom practice and application, making this book an essential resource for teachers in any setting, phase or country.

John Hattie is Laureate Professor at the University of Melbourne, Australia and chair of the Australian Institute for Teaching and School Leadership. He is the author of the globally bestselling Visible Learning series of books and co-edited with Eric Anderman the original International Guide to Student Achievement published in 2013.

Shirley Clarke is an internationally known expert on the practical application of the principles of formative assessment. Her career includes teaching, test writing, lecturing for 10 years at the Institute of Education, University of London and directing numerous national research projects. Her bestselling books have made assessment practice relevant and accessible.

Visible Learning: Feedback

John Hattie and Shirley Clarke

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Introduction

John Hattie

John Hattie began his career as a teacher in primary and secondary schools, before moving into academia. His PhD is in measurement and statistics, and he has spent his career using these methods to better address educational questions. He has worked at the Universities of New England, Western Australia, North Carolina, Auckland and now Melbourne.

John is Laureate Professor at the University of Melbourne and co-director of the Science of Learning Research Centre. He is chair of the Australian Institute for Teachers and School Leaders, honorary professor at the University Durham and Auckland. He is past-president of the International Test Commission and associate editor of the *British Journal of Educational Psychology and Nature: Science of Learning* and serves on the board of 28 journals.

He has supervised 200 thesis students to completion (and is most proud of this) and published and presented over 1,000 papers. His hobby is collecting meta-analyses, aiming to evaluate the relative impact of various interventions. This led to Visible Learning (2009) and now 14 related books, translations into 24 languages, workshops around the world and a mission to more deeply understand the underlying story as to the most important influences.

In September 2001, he met Shirley Clarke in Chester, UK and was so impressed with her skills at translating research into teacher friendly books, he asked to work with her – which has led to a best-seller about formative assessment in New Zealand. He has gained from the critiques of his work by Shirley that have sharpened claims and arguments, leading to this book.

Shirley Clarke

Shirley Clarke is an internationally known expert in formative assessment. She works with teams of teachers every year evaluating formative assessment strategies linked with research findings to evolve the practical application of formative assessment. Her many publications and presentations have enabled teachers across the world to have access to research and practical tried and tested strategies. Her work has had a major influence on practice in schools across the UK and beyond.

A former primary teacher in England, she went on to become a mathematics adviser, a test writer and then an academic at the Institute of Education, University College London, during which time she conducted a number of national research projects looking at the impact of testing on teachers and students. She was awarded an honorary doctorate in 2007.

Her publications, with a number of translations, are worldwide best sellers in schools because they combine research with practice in a tried and tested, accessible way. She has added to the support for teachers by capturing video of teachers in action, and now has 140 high quality clips on her website video platform (www.shirleyclarke-education.org). Seeing formative assessment in action by excellent teachers is a powerful way of communicating its impact and use.

In 2001 a New Zealand version of Shirley's book *Unlocking Formative Assessment* was published, which was the beginning of the liaison with John Hattie, culminating in this book, linking *Visible Learning* with research findings, practical strategies and examples of excellent practice of feedback.

Acknowledgments

excellence and understanding of what I wanted to achieve played a great part in their accessibility and popularity.

In my ongoing work with many schools and teams of teachers trialling formative assessment strategies, I wish to thank Seamus Gibbons and Gary Wilkie who have worked with me from young teachers to school leaders of excellent schools and along the way have contributed invaluable insights about the real world of formative assessment in action, also Kim Zeidler from the University of East Kentucky who purchased 1000 copies of my latest book for her students, so convinced was she of the power of formative assessment, and invited me to work with teachers there. The subsequent knowledge gained about the nitty gritty of the American school widened my horizons, as well as the two years living in Wisconsin working with educators.

Thanks go to all the educators across the world who agreed to contribute excellent examples of feedback in action to this book. These examples of practice bring the research to life and make it more likely that many other teachers will be able to put theory into practice.

A special thanks to Dylan Wiliam, the guru of formative assessment, who kindly made helpful suggestions for the book.

My husband, John, always gives enthusiastic support to my work and his attention to detail in providing administrative support as well as love and patience is greatly appreciated.

Most of all I have to thank John Hattie for the great privilege of being asked to co-author a book with him. It has been an honor to be collaborating with one of the greatest educators of our time, and his desire to combine both our skills has confirmed my long-standing belief that it is when research meets classroom practice that you get the greatest impact – on teaching, on learning, on future lives.

Shirley Clarke

Note

Throughout this book we have included multiple practical examples. Although the arguments put forward are quite generic and applicable to all phases of education, we had to decide how to make the content as accessible as possible for all readers. Thus there are more elementary examples than middle or high school, so that readers do not need advanced subject specific knowledge in order to fully understand those arguments.

Effect sizes

John Hattie's Visible Learning is based on his ongoing synthesis of meta-analyses about the effects of the various influences on learning. Each influence on learning has a carefully calculated effect size, with 0.4 as the mean across over 250 influences. The higher the effect size, the greater the positive influence and the lower the effect size, the smaller.

1

What is feedback?

This chapter summarizes the key points about the nature and development of feedback thinking by educators and academics, laying the foundation for the related issues to be explored throughout the rest of this book. The subsequent chapters are closely tied to the life of a teacher and a student in the day to day structure of lessons, as outlined in the introduction: culture, learning strategies, in lesson feedback and post-lesson feedback. Practical examples, wherever possible, will bring the findings to life.

We have asked thousands of teachers to answer the following question in a short sentence: What do you mean by feedback? These are typical of the ten main explanations:

> Comments – give comments on the way you are doing something
> Clarification – answering student questions in class
> Criticism – when you are given constructive criticism
> Confirmation – when you are told you are doing it right
> Content development – asking about the comment
> Constructive reflection – giving someone positive and constructive reflections on their work
> Correction – showing what you did right or wrong, which helps you
> Cons and pros – someone telling the pros and cons about your work
> Commentary – they comment on my work
> Criterion – relative to a standard

We have also asked as many students the same question, and by far the top explanation of their list is: feedback helps me know where to go next. Oftentimes when feedback is more about the above ten Cs, the students will claim that they did not receive any feedback. Some direction, some 'where to next?' feedback based on the ten Cs, however, is probably more powerful, as it helps defend the

reasons for moving forward. A major focus in this book is ensuring there is 'where to next?' feedback provided.

Some history . . . marking and grading

Not very long ago the word 'feedback' was rarely used. In the US, the term 'grading' covered what was then, and still often now, is assumed to be the most conventional way of giving some kind of response to students about their work or learning. In the UK and other countries, the term 'marking' was used to describe grades, comments or both. The feedback in this form was mainly summative and from teacher to student only. That isn't to say that formative, oral, immediate, student to teacher and student to student feedback wasn't taking place, but it had not been highlighted for its significance.

Marking and grading had come under fire in various studies. Ruth Butler's (1988) famous study, for instance, in which students were given either: a) grades, b) comment only or c) grades and comments found that those in the comment only groups had greater gains in progress (measured by test results) than the other two groups. Wherever positive comments accompanied grades, interviews with students revealed that they ignored those comments in favor of the grade and what it was telling them about their performance. They added that the positive comments were the teacher's way of cheering them up. Grades encourage students to develop ego-related mindsets rather than task-related mindsets. Grades often tell the student 'the work is over'. We must not confuse grading with feedback.

As comment only feedback became more common, the next step was to make sure it was specific enough to make a difference. The Office for Standards in Education (Ofsted) (the schools' inspection service) wrote to schools in England in 1996:

> Marking is usually contentious but often fails to offer guidance on how work can be improved. In a significant minority of cases, marking reinforces underachievement and under expectation by being too generous or unfocused.

The essential message is that the most valuable feedback focuses on helping the student improve. If the comments do not provide 'where to next' or 'how to improve this work' information then grades might be the only worthwhile indicator; but if grades are given with no other information, this might not lead to defensible interpretation as to current or future improvements.

Teachers were generally giving grades, comments, or both, to students *after* lessons, and these were seen as the most important and expected form of feedback. It

was also discovered that most comments, unless they required a student response, were often ignored by students if the feedback comments were given out with no time allocated for students to read the comments, no chance to use them to improve, or where they were illegible or hard to understand (e.g. Clarke, 2001).

Feedback: timing

Nuthall and Alton-Lee (1997) found that all students, regardless of their level of achievement, typically need to be exposed to any new learning at least three to five times before it has a high probability of being learned.

> Our data does not support the notion that lower achievers need more instruction. The critical requirement is that all students get access to comparable opportunities.
>
> *(Nuthall & Alton-Lee, 1997)*

During the multiple opportunities for learning and engagement, teachers need to provide feedback to refine the student's understanding of the content. Teachers need to plan for students' misconceptions to be identified, explored and challenged, to make transparent the links with their prior experiences and to provide multiple opportunities and scaffolding to make those links with new information: the essence of effective feedback. Nuthall is quite emphatic that students do not need merely repeated trials at tasks – there must be punctuating feedback. Doing the same thing (making the same errors) repeatedly leads to overlearning the wrong things. Neither should students have simply more experience of the same teaching, but instead a variety of experiences and feedback over three to five interactions.

Feedback: what matters

Hattie and Timperley (2007) defined feedback as relating to actions or information provided by an agent (e.g. teacher, peer, book, parent, internet, experience) that provides information regarding aspects of one's performance or understanding.

Feedback is information about the task that fills a gap between what is understood and what is aimed to be understood. It can lead to increased effort, motivation or engagement to reduce the discrepancy between the current status and the goal; it can lead to alternative strategies to understand the material; it can confirm for the student that they are correct or incorrect, or how far they have reached the goal; it can indicate that more information is available or needed; it can point to directions that the students could pursue; and finally it can lead to restructuring understandings. Royce Sadler (1989) set the scene in his seminal paper by

establishing the concept that feedback is information that 'closes the gap' between where a student is and where the student needs to be:

> The learner has to a) possess a concept of the standard (or goal or reference level) being aimed for, b) compare the actual (or current) level of performance with the standard, and c) engage in appropriate action which leads to some closure of the gap.

Once 'feedback' entered the teaching vocabulary, the power of verbal, in-lesson feedback between all parties and the place and quantity of post-lesson feedback became, and remains, a key focus. The research findings made the scope of feedback something that could not be ignored.

Rather than general, meaningless comments as feedback to the student (e.g. 'Try harder'), Terry Crooks revealed the most effective feedback content (2001):

> The greatest motivational benefits will come from focusing feedback on:
>
> ■ the qualities of the child's work, and not on comparison with other children,
> ■ specific ways in which the child's work could be improved,
> ■ improvements that the child has made compared to his or her earlier work.

All this needs to be undertaken in a climate of high trust and reduced anxiety. The issue of the attention paid to children's self-efficacy and self-esteem and the use of external rewards and other forms of extrinsic motivation was linked with types of feedback:

> Feedback is most effective when goals are specific and challenging but when task complexity is low. Giving praise for completing a task appears to be ineffective. Feedback is more effective when there are perceived low rather than high levels of threat to self-esteem.
>
> *(Kluger & DeNisi, 1996)*

Getting underneath student understanding, finding out what they really think, is the starting point of all feedback, from whichever direction, because only then can the feedback be appropriately constructed to provide advice:

> When I completed the first synthesis of 134 meta analyses of all possible influences on achievement (Hattie, 1992), it soon became clear that feedback was among the most positive influences on achievement . . . The mistake I was making was seeing feedback as something teachers provided to students. I discovered that feedback is most powerful when it is from the student to the teacher. What they know, what they understand, where they make errors, when they have misconceptions, when they are not engaged – then teaching and learning

can be synchronized and powerful. Feedback to teachers makes learning visible. (Feedback effect size 0.73)

(Hattie, 2012)

Feedback can have many functions: reinforcing success, correcting errors, helping to unravel misconceptions, suggesting specific improvements, giving improvement advice for the future, praising, punishing or rewarding, all with different levels of effectiveness. Who gives the feedback, whether it is task or ego related, and *how and whether it is received and acted upon* are all factors in its effectiveness. This last point is particularly pertinent: more attention needs to be given to whether and how students receive and act upon feedback, as there seems little point in maximizing the amount and nature of feedback given if it is not received or understood. This is why, throughout this book, we emphasize the interpretations that are made by the receiver about the feedback, and how it helps them answer the question 'Where to next?' or 'How could this be improved?'

Feedback thrives on errors and misconceptions. It might seem pointless to receive feedback about 'where to next' if our work is perfect, although in the case of almost all learning, there can always be some improvement and, in any case, knowing where to next in terms of extending one's learning is always valuable. The power of feedback focused on error and misconceptions is further explored in Chapter 3.

Both positive and negative feedback can have beneficial effects on learning. The untangling of these effects depends on the level at which the feedback is aimed and processed and the interactions between the validity of the feedback and the self-efficacy levels of students. In particular, negative feedback is more powerful at the self-level, causing personal evaluation. Both types can be effective when feedback is about the task, but there are differential effects relating to commitment, mastery or performance orientation and self-efficacy.

That students are taught to receive, interpret and use the feedback provided is probably much more important than focusing on how much feedback is provided by the teacher, as feedback given but not heard is of little use. Students, like adults, quickly learn to be selective listeners – feedback often means more investment in improvement, repeating the work and putting in more effort. Feedback can impact our beliefs about our work, our judgments about quality and can have other costs. The art is turning these costs into benefits in terms of deeper, worthwhile and valuable learning.

Finally, feedback needs to be combined with effective teaching and learning strategies to have the greatest impact. Sometimes, re-teaching is more powerful than just providing feedback. Feedback alone is not the magic bullet, as we describe in the following chapters:

■ The culture required to best enable effective feedback.
■ The types of teaching and learning strategies and techniques which form a structure within which to create effective feedback opportunities.

- Examples and analysis of the different types of in-lesson feedback.
- Examples and analysis of post-lesson feedback including to and from outside school partners.

Having summarized what we know about feedback, it is important that we acknowledge the fundamental problem – while feedback is powerful, it is also among the most variable of influences. The same feedback in one situation might be worthwhile, but in another situation of little value. Indeed, Kluger and DeNisi (1996) noted that one third of feedback was negative in its impact! Understanding this variability is critical, which is why simple claims about feedback are of low value, a problem explored throughout this book.

The following graphic from 'Coaching Teachers in the Power of Feedback' (Figure 1.1), a resource used in a research project in Australia (Brooks, 2017), summarizes the feedback cycle:

8 STEPS TOWARD FEEDBACK FOR LEARNING

8 Flows bi-directionally between learners and teachers
1 Sparks learning
2 Flourishes in the right environment
3 Clarifies for students where they are going
4 Informs students how they are going
5 Highlights the next steps for improvement
6 Matches the needs of the learner
7 Promotes students self-regulation
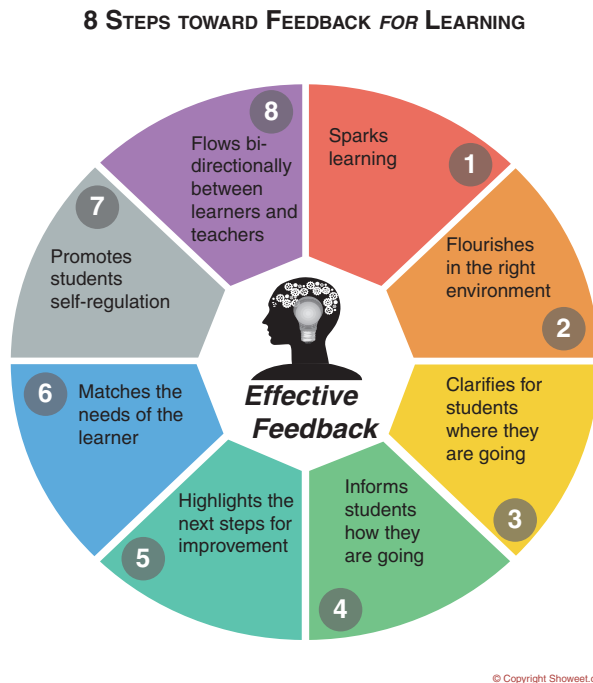
Effective Feedback

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Figure 1.1 Toward feedback for learning

Key points

- Feedback is powerful but variable in its impact on learning.
- Grades or comments with no focus on improvement might interfere with learning.
- Students prefer immediate feedback, but delayed feedback can be beneficial.
- Prior knowledge is the starting point for feedback.
- Feedback is about closing the gap between current and desired learning.
- Goals should be specific and challenging, but task complexity low.
- High self-efficacy and trust are needed for feedback to be effective.
- Student to teacher feedback is more important than teacher to student.
- Effective feedback occurs when it is received and acted upon.

2

A feedback culture

This chapter describes a culture in which students and teachers can be best equipped to learn, receive and give feedback. We have considered the elements which have the greatest capacity to make feedback and, therefore, learning effective, whether from teacher to student, student to teacher, student to student, between staff members or involving parents.

The key elements of an effective feedback culture are:

a) That feedback sits within a formative assessment framework.
b) That motivation, curiosity and willingness to learn and deepen current understanding are our aims for all learners (i.e. the skill, will and thrill).
c) That embedded challenge mindsets, mindframes, metacognition and deliberate practice, spaced not massed are effective.
d) That the normalizing and celebration of error is the key to new learning.
e) That equity in learning is maximized through mixed ability grouping.
f) That feedback needs to be task rather than ego related.
g) That we need to privilege the development of a desire to learn and there needs to be an absence of external rewards which act as negative feedback.

a) Feedback sits within a formative assessment framework

Definitions

We use the term 'formative assessment' as it is so firmly established, but we prefer to think of this conceptual framework as 'formative evaluation'. Any test can be interpreted from a formative (where to next?) or a summative (how did I go?) relative to 'Where am I going?' It is the 'when' (during compared to at the end) that distinguishes the two terms. Both are valuable, both need to be based on good information, and both can provide valuable feedback.