

# 27 Instructional Feedback

Analysis, Synthesis, and Extrapolation

Jeffrey K. Smith and Anastasiya A. Lipnevich

## Introduction

Instructional feedback is the process through which individuals receive information concerning their learning or production efforts that should enable them to improve their work. Feedback might come from a teacher, a peer, or from the learner simply observing the results of his or her efforts. It might include information on where the learner currently is, where the learner is headed, or advice on what the next steps in learning might be. It is closely related to and often includes, or is included in, formative assessment. We decided to focus this volume on instructional feedback as opposed to formative assessment for several reasons. One is that there already are a number of good edited works on formative assessment, but fewer on instructional feedback. Another was that we felt that instructional feedback was really “the heart of the matter.” The provision of information to the student about his or her progress is the *sine qua non* of helping students in their learning.

We look at the research on instructional feedback from a decades-old perspective from the seminal work of Scriven (1967), Bloom (1968), Ramaprasad (1983), and Black and Wiliam (1998), and they, in turn, examine great scholars from other fields, most notably physics, as described by Wiliam (Chapter 1 in this volume). We are further enlightened by a series of thoughtful reviews of the research in instructional feedback and the closely related area of formative assessment (see, e.g., Crooks, 1988; Kluger & DeNisi, 1996; Hattie & Timperley, 2007; Shute, 2008). The reader can see these classic works cited time and again in the preceding chapters.

Our approach to inviting authors was to cast our nets widely and to entice scholars to contribute by offering as much free rein in their writing as possible. We wanted people to be able to say things that were on their minds that they had not expressed before. We also wanted to be expansive in our coverage of the topic. We wanted to look at feedback in various subject areas and age levels as well as general consideration of the topic. We wanted to garner research on variables that impact on feedback and that feedback impacts on. We wanted to get perspectives outside traditional Western approaches. As a consequence, we not only have contributions that provide a rigorous review and analysis of certain areas, we also have heartfelt calls for certain directions and approaches to be taken in the field. It has been a long and sometimes difficult journey, but

we are thrilled to have been able to present this compendium to the reader, and we offer our profound thanks to the scholars who have selflessly contributed to this work.

### **What Is Instructional Feedback?**

Almost every chapter in this volume begins with some discussion about what instructional feedback is. Many chapters make reference to Ramaprasad (1983), and this is a good starting point. Frequently, the notion that instructional feedback provides information about where a student is, where the student is going, and how to bridge the gap between the two is proffered. But we wonder if this three-pronged approach is actually the correct one. What if the students are only given information on where they are and how to improve? What if there is no information on what the ultimate goal is? What if there is no ultimate goal other than “improvement”? If we are working with a fourth-grade student on general problem-solving in mathematics or on comprehension skills in reading, it is reasonable to argue that we have a sense of the appropriate trajectory, but not the ultimate destination. Hence, the gap between current status and the desired status is something of a fiction. To push this argument a bit further, what if there is only information about current status? If a student is only informed about how well he or she is currently performing, is that feedback? Stobart (Chapter 2), citing Eraut (2007), argues for the following definition of feedback:

Any communication that gives some access to other people’s opinions, feelings, thoughts or judgements about one’s own performance. (p. 6)

We think this alternative has much to offer. But we would push this definition a step further in terms of opening up the definition of feedback. We do not think the communication has to come from another person. It does not technically have to be a communication. It might come from something inorganic. Imagine an archer. She lets fly with an arrow and sees that she has overshot her target. She ponders what she did (maybe she even has video-recorded the shot during a training session). She makes adjustments in her technique and tries again. No one has assessed her actions or spoken to her. The flight of the arrow is the feedback. It does not involve people or opinions, feelings, thoughts, or judgments. It simply is information concerning a performance. It knows nothing of the archer’s status at the sport, nor her most recent efforts at improvement, nor of the archer she aspires to be. And yet it is hard to argue that it is not feedback. Furthermore, it is unbiased, immediate, and highly pertinent to improvement. Consider Hattie and Timperley’s (2007) approach:

Feedback is information provided by an agent (e.g., teacher, peer, book, parent, self, experience) regarding aspects of one’s performance or understanding. (p. 102)

At the risk of focusing too much on small distinctions, we would like to see the definition include some notion that the information influences the learner with regard to the performance. Hence, we offer:

*Any information about a performance that a learner can use to improve that performance or grow in the general domain of the performance.*

This definition allows for feedback to come from any source and includes learning in the general domain of the performance in addition to that specific performance. A person receiving feedback on a piece of writing may be able to use that feedback to improve that particular piece of writing and to improve writing skills in general. This definition is similar to the one that Wiliam (Chapter 1) cites from Kulhavy (1977): “any of the numerous procedures that are used to tell a learner if an instructional response is right or wrong” (p. 211). But we do not want to limit feedback to information about right and wrong, as many things that we work on in life are more complex than right or wrong. Something could be “right” and still have the potential to be “better.” This may seem a quibble, but it is important to consider the small issues when thinking of definitions.

And to the end of small issues, Wiliam (Chapter 1) points out that there is an important distinction to be made between the notions of *performance* and *learning*. If a learner receives feedback about a performance (let us say, an essay) that leads to improvement in a subsequent version of that performance (a second draft of the essay), but makes the same mistake in the following, related performance (the next essay written), where are we in terms of the effectiveness of the feedback? And on the other hand, if feedback does not affect current performance (for example, if there is no second draft to be done), but the learner does not make the same mistake in the future, is the feedback effective? We think all would agree that the answer here would be *yes*, and thus, we need to include learning along with improvement in performance in a definition of feedback.

### **Unpacking Instructional Feedback: How Is It Related to Formative Assessment?**

We tend to think of instructional feedback as a response to some sort of performance or effort by a student. We think about formative assessment and assessment for learning in much the same way. Is there utility in thinking about instructional feedback as something distinct from formative assessment? As Guskey (Chapter 19) points out, Bloom took the revolutionary distinction of formative and summative evaluation developed by Scriven and applied it to diagnostic classroom assessment processes in his development of mastery learning theory (Bloom, 1968; Bloom, Hastings, & Madaus, 1971). In his writings and teaching, Bloom would explain that formative assessment allowed teachers to provide the feedback and correctives necessary to improve learning. He

clearly distinguished between formative assessment, which was a process through which information was gained on learners, and feedback, which was then provided to learners by teachers in order to improve learning. Brookhart (Chapter 3) presents an excellent review of formative and summative assessment, and how each can contribute to student learning.

William (Chapter 1) focuses on this question and develops an answer that we fundamentally agree with. Feedback is a component of formative assessment, whether that feedback is directed toward a particular learner's progress or toward the efforts of a teacher working with a class in general. In this fashion, formative assessment encompasses feedback, as feedback is an integral part of the formative assessment process. But formative assessment also involves setting tasks, relating those tasks to the curriculum or learning objectives, etc., whereas feedback does not necessarily involve such components (it might just be observing the flight of an arrow). Thus, at the same time, and somewhat paradoxically, it is possible to think of formative assessment as one approach to feedback among many others. Thus, each term encompasses the other, depending on one's perspective.

### **How Does Instructional Feedback Vary by Subject Matter and Age?**

One of our goals in this volume was to allow subject-matter specialists and specialists in teaching students of different ages the opportunity to talk about the uniqueness of their various specialities. What is clear here is that feedback in music instruction (Parkes, Chapter 10) is incredibly different from feedback in writing instruction (Graham, Chapter 7) or in math instruction (Small & Lin, Chapter 8; Ruiz-Primo & Kroog, Chapter 9). Although there are similarities, tertiary education (van der Meer & Dawson, Chapter 12) presents problems wholly unrelated to those encountered in primary education (Tan & Wong, Chapter 6). And feedback in medical schools (Sargeant & Watling, Chapter 13) and the workplace (Athota & Malik, Chapter 14) are entirely different again. Perhaps the chapter that brings the differences most clearly into focus in this volume is the one on feedback in animal learning (Kaufman & Pagel, Chapter 22). So what is it that we see that holds these various areas together, and what is it about them that is distinct?

Starting with distinctions, several dimensions can be seen. One has to do with the impacts that curricular differences have on feedback. Mathematics feedback is more likely to focus on specific issues that are currently being taught than feedback in reading or writing where growth is somewhat more amorphous. This is not to say that mathematics does not also focus on the broader issues of quantitative reasoning and problem-solving, but looking at feedback, particularly at the primary level, one sees feedback being provided on very specific problems. If one is working with students on the characteristics of triangles, then feedback will focus on just that. In writing, using metaphoric language

focuses not on a small number of metaphors but on the broader processes of thinking metaphorically and their impact on the reader.

A second difference that can be seen has to do with the age and level of development of the learner. As learners become more sophisticated, they can process feedback more broadly defined and can handle feedback that is presented in a straightforward and direct fashion (for the most part). They can also process more feedback being presented at once. Younger learners can be overwhelmed by too much information being presented at one time. Furthermore, the nature of the relationship between the provider of feedback and the student differs. For a second-grade student, the teacher is often pretty close to being a surrogate parent, whereas a teaching assistant marking a college introductory biology class assignment may be totally anonymous to the receiver of the feedback.

Looking more closely at the differences in feedback across levels of schooling, there are specific characteristics of feedback that are unique to the secondary school setting. Among these are the pressure for students to do well on standardized achievement measures, the demands of providing grades that are critical to students' chances of getting into a desired college, and the student to teacher ratio (Boyer, 1983). The typical secondary school teacher has an average class size of 26.8 students; with four to five classes that a typical teacher has each year, that means well over 100 students to attend to. To spend five minutes per student on devising individualized feedback on a single assignment would take a teacher six hours of working without a break (see, e.g., Price, Smith, & Berg, 2017)! Another issue of importance at the secondary level are the substantial differences in what is being taught in various subject areas. What students are learning in an English class differs dramatically from what they are learning in a German or a physics class, or in instrumental music. With regard to feedback, one size clearly does not fit all. In sum, the three key factors to take into consideration when looking at the issue of feedback at the secondary level are the number of students, striking differences in subject areas, and the need to provide fair grades that will inevitably affect students' future academic paths.

At the primary level, the numbers are much smaller, and the subject areas, while distinct, are less differentiated than at the secondary level. Developing reading and mathematical skills take precedence over other areas of the curriculum. Grades, while somewhat important, pale in comparison to their importance at the secondary level. In comparing to tertiary instruction, the differences are equally dramatic. College faculty may deal with very large numbers of students, but in such courses there is typically little or no instructional feedback provided and assessment is often done with multiple-choice tests. For those classes that are much smaller this situation changes, but again, presentation of instructional feedback remains somewhat limited. And there are no standardized tests to worry about.

Moving to similarities, feedback needs to come from a trusted source in all settings. If we do not have faith in the accuracy of the feedback, we are unlikely to attend to it. If students do not make active use of the feedback provided, it

has little or no value in instruction (Jonsson & Panadero, Chapter 24). We also see that the use of self- and peer assessment can be effective and efficient tools at all levels of instruction, although some scaffolding will be necessary with younger students (Andrade, Chapter 17; Panadero, Jonsson, & Alqassab, Chapter 18). In one of the most revealing and intriguing chapters in the volume, the use of clickers as a bridge (a type of secondary reinforcement) in animal training made a lightbulb light up for us (Kaufman & Pagel, Chapter 22). Learners need to know as precisely as possible what they are doing right and where they can improve. This is universal. When working with animals, you cannot have a conversation with them. They cannot ask questions and get a refined assessment of their performance. The clicker is the opportunity to signal to the animal, “Yes, just NOW!” The click can be delivered as a secondary reinforcement more quickly and more accurately than a primary reinforcer (say, food). In music, the instructor will frequently stop a learner at the exact point in which an error was made (Parkes, Chapter 10). A teacher working with a student on an essay can write a note right next to a problematic section of the essay (or a particularly good one). The accuracy of the feedback to the performance does not require a clicker. But accuracy is key in all feedback.

Also common across subject areas and ages is that a general positive emotional experience with the feedback greatly enhances its effectiveness in most settings (Goetz, Lipnevich, Krannich, & Gogol, Chapter 25). Feedback is one of the strongest sources and antecedents of emotions in a classroom, and appreciating its power to elicit various affective responses is a key to using it for student improvement. Although it may be the case that “a kick in the rear” will be motivational in some settings, the research does not support it as a general approach. That is, certain negative emotions in moderate doses may stimulate the learner to work harder (Goetz et al., Chapter 25); elevated negative emotions will serve as deterrents to performance.

### **What Do We Say and How Do They Hear It?**

Stiggins (Chapter 23) presents the reader with a moving personal story from one of the leading figures in the history of formative assessment and teaching, and one that we feel will resonate strongly with many readers. At the end of the day, we are reminded of the admonition of one of our colleagues (Joseph Zelnick of Rutgers University) to a group of student teachers about to engage in teacher/parent conferences: “You’ve got to remember that these are the very best children that these people have. They aren’t keeping the talented ones safe at home.” And so we become very much vested in the notion of what we say to students and how they hear and respond to what we say. We have three excellent chapters on noncognitive issues and feedback (Murano, Martin, Burrus, & Roberts, Chapter 11; Jonsson & Panadero, Chapter 24; Goetz et al., Chapter 25) and another solely dedicated to looking at the kind of language we use in providing feedback to students (Murray, Gasson, & Smith, Chapter 4).

It is not hard to think of times when all of us have eagerly anticipated feedback, or dreaded it, or were on the fence depending on what the feedback contained. We know that some individuals tend to typically seek out feedback while others typically avoid it, but we also know that response to feedback is often dependent on the situation. In our earlier work (Lipnevich, Berg, and Smith, 2016) we proposed a model of feedback receptivity, and we feel it can be a useful tool to consider the complexity of feedback. Feedback is always received in context, and it may be a setting and subject area where the student is comfortable or uncomfortable, and where the outcomes are very important to the student or less so. Hence, the consequences of such feedback will be variable. Feedback can be viewed as supportive and thus may elicit positive emotions, or it may be perceived as potentially negatively consequential for the student and, thus, be anxiety-producing. It may be delivered in a classroom environment that is friendly and collaborative or in a competitive space and serve as a source of social comparison. Furthermore, feedback may vary on a number of factors. It may be detailed or sparse, aligned with the student's level and expectations or not. It may be painfully honest but delivered in a strongly supportive fashion or be unpleasantly judgmental. Students receiving it may have vast background knowledge in the domain or be complete novices. They may be positively or negatively disposed toward feedback in general.

When a student receives feedback, affective and cognitive responses follow. The student may experience dismay, joy, a feeling of pride or embarrassment, worry about how parents or peers will react, have a sense of having disappointed the teacher or themselves in their performance, or of having made the teacher proud. In reading through the feedback, the student might be confused by the comments or fully appreciative of them. From this amalgam of affect and cognition, students will act adaptively or maladaptively. They will work on the assignment, taking the suggestions made by the teacher into account, or perhaps discount what has been said in order to protect their sense of self-worth. And finally, how the student reacts to and acts on the feedback will affect who the student is, what the student knows and can do in this area, and how the student will respond in the next cycle of feedback. The feedback may trigger responses that generalize across settings and subject areas or may remain specific to situations highly similar to this one, and generate responses in other domains.

In related thinking on these issues, Panadero et al. (Chapter 18) look at current research on peer assessment and find that issues of trust are essential for such feedback to be effective. Goetz et al. (Chapter 25) examine the emotional reactions that students have to feedback. They remind us that feedback has affective consequences as well as cognitive ones and that those noncognitive consequences have impact on the receipt of subsequent feedback. Hence, it is always essential to attend to the emotional as well as the academic aspects of the message that is delivered to learners. Murano et al. (Chapter 11) turn the tables on this issue by looking at how important noncognitive factors in schooling can be affected by feedback. We want students to achieve in the

domains of math, reading, and science, for certain, but we also have a host of noncognitive objectives in schooling, and these authors show us how the research in cognitive areas generalizes to the noncognitive. Finally, the chapter by Murray et al. (Chapter 4) presents an approach to categorizing written feedback and shows that the nature of feedback that is provided is highly dependent on who is providing the feedback.

### **How Do We Study Instructional Feedback?**

The conduct of research on instructional feedback involves a number of challenges for the researcher, as pointed out by Brown and Harris (Chapter 5). To begin, instruction occurs in widely different subject areas and at many different levels. One of our goals in this volume was to solicit work from scholars researching different levels and in different areas, and the comparisons and contrasts we see are stark. Instructional feedback for elementary school mathematics differs dramatically from what is presented to university-level students developing their writing skills. As discussed above, there are commonalities for certain, but there are also differences that simply have to be acknowledged in the design of any research study. Such problems are not unique to studying feedback, however; they are endemic to the study of education. They limit our ability to generalize from one study to another, but they are challenges, not barriers.

A much tougher nut to crack in the conduct of research on instructional feedback has to do with the very nature of feedback. Instructional feedback does not exist in a vacuum; a host of contextual effects need to be taken into consideration. Instructional feedback, in a classroom setting, occurs typically between a student and the student's teacher. The student knows the teacher and vice versa. Every feedback message that is sent and received is peculiar to the history of the relationship between the student and the teacher. The assignment handed in by the student (or even the work being done in class as the teacher traverses the classroom) is part of a chain of interactions between teacher and student. It may be exceptionally good (or poor) work for this student; it may represent a breakthrough in understanding (or a regression back to a previous state); it may demonstrate exceptional effort or a sloppy job. And the response to this work given by the teacher may be viewed as harsh by the student or highly encouraging; it might be eagerly consumed or totally ignored. The teacher may have given the work short shrift because of a heavy workload or a crying baby in the middle of marking. These are all factors that enter into the equation of instructional feedback.

We enter into that equation from a research perspective without a strong handle on what has happened or is happening. And we are faced with the dilemma of either trying to observe without interfering in the process or trying to implement an intervention or experimental condition to see how that influences any of a set of possible outcomes (cognitive, affective, or behavioral). If



we take an observational approach, we are likely to get results that are long on ecological validity, but may suffer from susceptibility to a host of alternative explanations of the phenomenon we observe. If we intervene experimentally, we are more likely to be able to attribute outcomes to experimental manipulation, but do not know if the findings will replicate in real-life settings. So, what are we to do?

A facile answer would be: both. And although that answer is certainly true as far as it goes, it does not really answer the question in a satisfactory way. What we really need is “Both at the same time.” We would argue that we need to be able to work in real classroom settings and engage in experimental manipulations that allow for less ambiguous attributions of cause without creating such an artificial setting that we are doubtful of the generalizability of those results. A good example of the kind of work we are talking about can be seen in a study by Price, Smith, and Berg (2017). Working within a real classroom setting, this team of academic and school-based researchers randomly assigned students in writing classes to different kinds of instructional feedback on their work, in this instance comparing individualized personal feedback on an essay to annotated exemplars of high-quality essays on the same or similar topics. They found that the effects of the two approaches were roughly similar in terms of the quality of the revisions that students produced on their draft essays (after having received personalized feedback or annotated exemplars). They also found that students preferred the personalized feedback, but liked the annotated exemplars as well. Finally, they found that the annotated exemplar approach was far more time-efficient for the teacher. This study was limited by sample size, the specificity of the school in which it was conducted, and the use of teacher as researcher. At the same time, it provides a highly enlightening look at what happened in two real classrooms when a randomized experiment was conducted looking at the effects of two radically different approaches to feedback. We believe this represents exactly the kind of research that the field needs.

Indeed, we have conducted similar work at the university level (Lipnevich & Smith, 2009). Our study involved a much larger sample and more elaborate design; these were afforded to us by the nature of working in a large, introductory psychology class at a major state university. We found that detailed feedback, without the use of praise or a tentative grade, produced the best results in terms of students revising their work. In a second study (Lipnevich, McCallen, Miles Pace, & Smith, 2014), we compared the effects of rubrics and exemplars as instructional feedback in an experimental setting. We found that students prefer exemplars but are more productive when using rubrics. Each of the three studies had the advantages of randomization in situ, a powerful tool for drawing conclusions that can be attributed to manipulations in real-life settings. Each also had the limitation of the setting and subject matter in which they were conducted, awaiting replication and extension.

Another problem and, again, a very difficult one, has to do with the difference between production and learning in instructional feedback research. It is one thing to note that a piece of student work has improved as the result of

receiving feedback on that work, and another to see if the student has experienced cognitive growth in the area where the feedback was given. Without question, we need more studies that focus on the latter.

### **What Kinds of Students Do We Want to Raise?**

Three of the chapters (Tan & Wong, Chapter 6; Kanjee, Chapter 20; Arimoto & Clark, Chapter 21) present perspectives from outside a traditional Western perspective. They bring home to us powerful reminders that not only is education not the same around the world, but societies are not the same around the world. Arimoto and Clark, in particular, argue for a very different model of what kinds of students societies strive to raise, and how instructional feedback interacts with those different goals. At a very fundamental level, they question the notion that we want our children to strive to succeed, to be excellent, to be creative and innovative, to stand out from the crowd. The very act of saying, “this is where you should be headed” presumes that it is the teacher (or the curriculum) who should make that decision, and not the learner. Kaufman and Pagel (Chapter 22) present a dramatic counterpoint to the Arimoto and Clark perspective. In animal training, the notion of what the animal wants to do or learn is simply not something we consider. On the other hand, since the ability of animals to communicate to humans is limited, then feedback has to take on a very different dimension. Here an unabashed use of behavioral techniques is called for. In thinking about feedback and its effects, we usually do not step back and ask broader contextual questions at a societal level. Perhaps we should.

### **Whither Feedback in a Brave New World?**

Guskey (Chapter 19) explains that Bloom wanted to replicate the instructional setting of one student with a highly skilled tutor in his development of mastery learning theory. Formative assessment played a critical role in Bloom’s thinking. And mastery learning has seen its successes (and failures). But the goal of mastery learning (one student, one skilled tutor) remains a challenge for us in developing instructional feedback approaches. Price, Smith, and Berg (2017) found that providing individualized feedback took much more time on the part of the teacher as using annotated exemplars. But one might ask if the use of an annotated exemplar, or a rubric (see, e.g., Andrade & Du, 2005; Lipnevich, McCallen, Pace, & Smith, 2014), can even rightfully be considered feedback. We think clearly that these are forms of feedback, but others may disagree as no information about the student’s performance is directly provided; it must be inferred by the student by comparing the student work to the exemplar or rubric specification.

The question of how we can provide effective feedback in an efficient fashion is, in our opinion, a major challenge for the field. We have turned to peer

assessment (Panadero et al., Chapter 18), self-assessment (Andrade, Chapter 17), and technology (Munshi & Deneen, Chapter 15; Homer, Ober, & Plass, Chapter 16) in our efforts to assist the classroom teacher in providing quality feedback to students. As our technology becomes more sophisticated, the ability to provide feedback via technological means becomes more widely available. As is always the case with technology and education, this is a bit of a double-edged sword. Educators do not really have a sterling record when it comes to the effective use of technology. However, we are ever hopeful and encourage the reader to give careful consideration to the Homer and Ober's and Munshi and Deneen's efforts in this regard.

### **Where to from Here?**

There are a number of things that we know about instructional feedback due to the excellent work of people who have provided these chapters and the scholars whose work they have relied on. In this final section, we look at the issues that we feel the field needs to address in the immediate and longer-term future.

To begin, we feel the field needs to look carefully not at feedback as a generic notion but much more specifically at the types and nature of feedback that is provided. We see progress along those lines in the research of Hattie and Timperley (2007) and Shute (2008), but we also see the need for much more refinement along these lines. The work of Murray et al. (Chapter 4) advances this refinement, but more work can be done. If we can more precisely define the nature of the feedback that is provided, we can more precisely understand its effects.

A second area in need of more work has to do with the efficiency of feedback. In a workshop one of us gave recently, we spent a fair amount of time explaining a particular approach and why it would be effective. At the conclusion of the presentation, one of the teachers in the audience raised his hand and said, "You do realize that I have 100 students?" We simply must push ourselves to look for ways to help teachers in providing effective feedback that does not require hours and hours of work on their part. That is why we are hopeful about the use of peer feedback, rubrics, exemplars, computer-assisted feedback, instructional games and the feedback provided therein, and self-feedback. Self-feedback, in particular, seems important to us and may in fact represent the ultimate form of feedback. It not only helps the student with the immediate content being worked on but develops the ability to self-assess at the same time. Having students work from exemplars and rubrics, with the guidance of a teacher, appears to generate good results efficiently.

Next, we believe that the field will benefit tremendously by looking at the noncognitive aspects of feedback, both the influences of noncognitive variables on feedback and the influences of feedback on noncognitive variables. Concerns such as motivation, the development of self-efficacy, resilience, and others come into play in the complex matrix of the delivery and receipt of feedback.

Finally, we need to take a very broad view of feedback as part of instruction, and ask ourselves what kind of students we strive to see. We often simply take for granted that our primary goal should be to see students excel, reach their maximum potential, and be the best. But in doing so, do we ignore concerns about the development of a just and equitable society? This takes the question into one of educational philosophy more than educational research, but we should always keep our eyes on the long view as well as the wonder and awe of the immediacy of day-to-day classroom life.

We hope this summary helps to unfold the complexities of how students respond to feedback and highlights potential areas for future research. Tremendous progress has been made in the domain of instructional feedback; we look forward to the continuation of this progress and hope that the reader will join in those efforts.

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