24 Facilitating Students' Active Engagement with Feedback

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There is an increasing consensus that the quality of students' engagement with, and use of, the feedback they receive is a critical element of feedback effectiveness. Winstone, Nash, Parker, and Rowntree (2016) use the term "proactive recipience" to emphasize the active contribution and responsibility of the learners who are the recipients and who have to engage with the feedback they receive. On the other hand, there is ample evidence suggesting that students' engagement with their feedback is usually not very productive. For instance, Brown and Glover (2006) wrote that their interviews with students showed that the students did not act on feedback to improve their work, although they did value receiving it. The same message is reiterated in other studies, where many students reported not reading their feedback or using it rarely, if at all (MacDonald, 1991; MacLellan, 2001; Sinclair & Cleland, 2007). Therefore, there is a pressing need for more research on how to understand and improve students' engagement with their feedback (Jonsson, 2013; Winstone et al., 2016).

The aim of this chapter is to bring together research on students' use of feedback in order to provide a picture of what kind of research has been conducted and what we currently know about how to facilitate students' engagement with their feedback. The main sources for the chapter are two recent reviews by Jonsson (2013) and Winstone et al. (2016). These two reviews complement each other by having slightly different foci and analyzing and presenting their findings differently.

The chapter is structured as follows: First, we present a general overview of existing research into students' use of feedback based on the two reviews. This overview outlines how the respective searches for studies were performed and describes characteristics of the outcomes. Second, we summarize a taxonomy of "recipience processes" used by Winstone et al. (2016) to categorize interventions aiming for improved student engagement with feedback. Third, we present an overview of factors that may moderate students' engagement with the feedback they receive. Finally, conclusions based on the previous sections are drawn regarding recommendations for practice on how students' engagement with feedback may be facilitated.

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An Overview of Research on Students' Use of Feedback

In 2013, Jonsson (2013) published a literature review aiming to identify the difficulties students face when using feedback. This review focused on research in higher education and on feedback provided by educators (i.e., not peers, computers, etc.). Furthermore, a time limit for the search was set to 1990. Data were collected by starting from a number of recent publications (2009–2010). The reference lists in these articles were then used to find new articles, continuing iteratively throughout the review process, a method referred to as "snowballing."

In total, 103 studies were included in the review. These studies varied across academic subjects (e.g., humanities, technology, business), and the feedback studied consisted almost exclusively of written comments on students' written work (mostly essays). Research designs encompassed mostly questionnaires and interviews, sometimes in combination. A number of studies complemented students' perceptions with analyses of examination results or teacher feedback. Only very few studies were found that went into detail about students' strategies for handling feedback. In fact, only two studies investigated mechanisms behind students' use of feedback in vivo by employing think-aloud protocols to record students' verbal reports during revisions of essays (Dessner, 1991; Dohrer, 1991). Consequently, all but two studies investigated students' use of feedback through "indirect" measures, such as studying changes made in revised drafts or by asking students about how they used their feedback retrospectively. Therefore, according to the 2013 review findings, the evidence available on students' actual use of feedback was quite scarce.

The main contribution made by this review was a thematic analysis of factors influencing students' use of feedback. A small number of factors were identified that were recognized as important in several studies. These factors are presented as five themes, including commonly reported obstacles for using feedback, as well as possible ways to promote a more productive use of the feedback. One of the major barriers for using feedback formatively is that students do not find the feedback useful, for instance, because they are not given the opportunity to revise their assignments. Another problem identified in the review is the lack of congruence between students' preferences for feedback and the kinds of feedback that actually seem to aid them in using it productively. The optimal feedback for formative use may not necessarily be specific, detailed, positive, and individualized, as is often assumed. Instead, less specific and less individualized feedback that forces students to actively engage with the information may actually be more productive for student learning. Yet another barrier for using feedback formatively is the authority expressed through the feedback, including grades or marks, since some students do not question such authoritative feedback. This means that these students may choose to avoid difficult and cumbersome revisions, which could potentially improve the quality of their performance. Instead, they may focus on revisions that are perceived as easier

and safer, such as form and mechanics, in order to optimize their chances to obtain high grades or marks without too much effort.

While the aforementioned obstacles depend largely on the teacher, there are also factors identified in the review that depend on the students. These factors include the lack of strategies for using the feedback students receive and the lack of understanding of the academic terminology. Obviously, if students do not know what to do with the feedback or do not understand it, then asking them for revisions will not help. To overcome these barriers, substantial changes to the instructional process (e.g., the opportunity to engage in dialogue with the teacher using model answers or exemplars along with the feedback) are in order (Jonsson, 2013).

In 2016, Winstone and her colleagues published a literature review focusing on factors that may affect learners' engagement with feedback, while also aiming to describe different feedback interventions along with the processes they have targeted. It is notable that even though the search performed by Winstone et al. (2016) was both broader (i.e., no time limit, not only higher education, not only educator feedback, and not only empirical research) and used a more thorough methodology (i.e., searching databases with keywords, resulting in 4,862 initial hits), the outcome did not differ considerably from the review by Jonsson (2013). In total, 195 studies were included, all published between 1985 and 2014, and more than 80% contained some form of empirical data. Among the 159 empirical studies, only eleven included students from primary and secondary schools. In studies that included students from higher education, participants from different disciplines were represented, such as social sciences, STEM, health and social care, and arts and humanities. Most of the empirical studies focused on feedback as provided by an educator (81%), although some focused on different sources of feedback or on multiple sources, such as peer and self-feedback. The most common method was surveys (55%), but many studies also used focus groups (23%) and/or individual interviews (21%). A number of studies used quantitative research methods, including a few with quasi-experimental and experimental designs.

The main contributions made by this review are the systematic presentation of potential moderators of proactive recipience, organized around an interpersonal communication model, and the proposal of a framework for categorizing interventions designed to influence students' use of feedback. This latter framework includes both the components that the interventions target and researchers' rationales for the development of such interventions. The taxonomy is a particularly important contribution because it organizes existing research and serves as a guide for future research. It may also guide practitioners when identifying problems to be addressed and when planning possible solutions (Winstone et al., 2016). Both of these contributions will be presented in more detail in the upcoming sections, starting with the framework for categorizing feedback interventions.

A Taxonomy of Recipience Processes

As presented above, one of the aims of the review by Winstone et al. (2016) was to identify pedagogical interventions for supporting students' engagement with feedback. The authors systematized the "recipience processes" (i.e., the processes that the recipient could activate) that these interventions targeted and presented a taxonomy of such processes. Their analyses included 105 studies that detailed the outcomes of interventions designed to support students' use of feedback. Studies were categorized in two ways: (1) by the components of the interventions, including the outcomes, and (2) by the rationale for the interventions.

Starting with the components of the interventions, this classification resulted in fourteen main categories (Table 24.1) that were often used in combination with each other. These individual components were grouped in four clusters with conceptual similarities.

In their analysis, Winstone et al. (2016) also categorized the rationale for the interventions resulting in four recipience processes:

1. *Self-appraisal* means making judgments about oneself, such as students' own traits or behavior. This process supports proactive recipience by empowering students to assess their own strengths and weaknesses, thereby reducing their reliance on external sources of judgment.
2. *Assessment literacy* means understanding the grading process and using it to assess one's own performance. This process supports proactive recipience by allowing the students (1) to understand the relation between assessment, learning, and what is expected; (2) to evaluate their own and others'

Table 24.1 *Intervention components and clusters identified by Winstone et al. (2016)*

Cluster	Intervention Component
Internalizing and applying standards	Peer assessment
	Self-assessment
	Engaging with grading criteria
	Dialogue and discussion
Sustainable monitoring	Action planning
	Portfolio
Collective provision of training	Feedback workshop
	Feedback resources
	Exemplar assignments
Manner of feedback delivery	Formative assessment/resubmission
	Feedback without a grade
	Tailored feedback
	Presentation of feedback
	Technology

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performance against certain criteria; (3) to understand terminology and concepts used in feedback; and (4) to be familiar with ways of assessing and giving feedback. (Price, Rust, O'Donovan, Handley, & Bryant, 2012, pp. 10–11)

3. *Goal-setting* refers to students' ability to articulate desired outcomes, which in turn requires them to adopt some kind of strategy to reach these outcomes. *Self-regulation* means planning, monitoring, and evaluating progress and strategies, thereby subsuming the process of goal-setting. These processes support proactive recipience by empowering students to translate their goals into plans of action and to review and adjust their performance and strategies in order to reach these goals.
4. *Engagement and motivation* is about being open to receiving feedback. Such engagement requires a commitment to change and development, paying attention to the feedback, and being prepared to use it. This process supports proactive recipience by facilitating the motivation to read and understand feedback.

In order to avoid excessive details, only the clusters are presented below and not the individual components. Instead, examples of findings are mentioned briefly, along with one study summarized in more detail. For a more detailed presentation of individual components, see Winstone et al. (2016).

Internalizing and Applying Standards

In this cluster of studies, several intervention components included activities such as self- and peer assessment, where students were expected to become familiar with assessment standards. These interventions were often designed to target self-appraisal and assessment literacy but were also designed for the purposes of enhancing engagement and motivation. Findings from studies showed, for instance, that self-assessment was perceived to improve students' capacity to question their own work or develop their understanding of educators' tacit knowledge and the criteria used for assessment. Other findings showed that students appreciated interventions directed toward engagement with assessment criteria and that students were particularly open to guidance received during one-on-one feedback dialogues (Winstone et al., 2016).

As an example, Al-Barakat and Al-Hassan (2009) investigated how preservice teachers perceived the use of peer assessment during their workplace-based education (or "practicum"). Semi-structured interviews showed that students believed that peer assessment had several benefits, such as supporting the development of "instructional competencies" and making sound assessments of their own classroom performance.

Sustainable Monitoring

In this cluster of studies, students were engaged in documenting and tracking how their performance and feedback changed over time and reflected on these changes. Several recipience processes were targeted through action planning

and portfolios, but the most common was goal-setting and self-regulation. Findings from studies show, for instance, that students' engagement with feedback was facilitated by encouraging or requiring them to produce different kinds of action plans. Another finding was that keeping a portfolio of assessed work was perceived positively by students and facilitated engagement in reflection (Winstone et al., 2016).

As an example, Altahawi, Sisk, Poloskey, Hicks, and Dannefer (2012) investigated how medical students perceived a competence-based assessment portfolio system. This particular system was built around competence standards and continuous formative feedback, with no grades. These findings, based on individual narratives, showed that respondents independently suggested that the portfolio system had enhanced their training in ways that prior systems (which included grades) had not, particularly concerning self-reflective skills.

Collective Provision of Training

In this cluster of studies, some intervention components involved collectively supporting groups of students. Resources, such as workshops or exemplar assignments, were designed to extend students' concepts of feedback and to aid them in understanding and using their feedback and/or to be prepared for their own emotional responses to feedback. These interventions were mainly implemented for assessment literacy purposes. Findings from studies show that students who used a feedback guide perceived that this made them engage more with their feedback than they normally would. Another finding was that students engaged with and appreciated the opportunity to access exemplars of completed assignments (Winstone et al., 2016).

As an example, Cartney (2010) used peer assessment as a vehicle to engage social work students with assessment criteria. As part of this intervention, a workshop was held to explain the processes of giving each other feedback. The findings, based on focus-group interviews, showed that there was a general agreement among students that the feedback had supported them in improving their work. Moreover, several students claimed that they had started to seek feedback from peers in courses that did not include a formal peer assessment element.

Manner of Feedback Delivery

In this cluster of studies, a number of intervention components focused on how feedback was delivered, whether formative or summative, or in terms of content, presentation, or style. This cluster included the largest category of intervention components, which was technology. These interventions were mainly implemented for engagement and motivation purposes. Findings from studies demonstrated that students perceived that not receiving any grades made them take more notice of their feedback. Other findings revealed that students believed that they were more likely to use their feedback if they had

specifically requested it. Students were also receptive to feedback that was delivered through digital learning environments (Winstone et al., 2016).

As an example, Wingate (2010) investigated the impact of formative feedback on the development of academic writing for first-year undergraduate students. The findings, based on text analysis and interviews, showed that students who had made use of their feedback improved in the areas criticized. However, for several students the same problems persisted because they had paid little attention to their feedback and had not acted on it.

Summary and Conclusions for Future Research

The reviewed research demonstrated a number of positive effects of feedback interventions on students' engagement with feedback. However, most of this research was based on self-reported data only. More research using other kinds of data (e.g., comparing first and second drafts) and other kinds of research designs (e.g., experimental conditions) is needed in order to substantiate claims made from self-reported data.

Winstone et al. (2016) showed that far more interventions targeted students' motivation to use their feedback, as compared with goal-setting and self-regulation. The primary focus for several of these studies was on students' satisfaction with feedback, rather than their actual use of it. Since goal-setting and self-regulation could be considered key goals of education (Wiggins, 1998), there is a need for more interventions aiming for improved student engagement with feedback as a means of fostering students' self-regulation.

By far, the most common intervention component was technology used for feedback delivery, whereas components pertaining to the cluster "collective provision of training" were relatively rare in the interventions. Further, the components in the cluster "sustainable monitoring" were also rarely used. Still, both of these clusters of intervention components could be important tools for students' autonomy and self-regulation. More research is needed where interventions aimed at improving student engagement with feedback provide (1) tools and strategies for students to track their progress, such as action planning and portfolios, and (2) training and resources, such as workshops and exemplars – especially in combination with means to foster students' self-regulation.

The research reviewed in Winstone et al. (2016) reported a number of difficulties with the interventions. For example, the described interventions were often time-consuming to set up and/or to implement. Furthermore, several interventions were difficult for students to understand, and students engaged with them less than expected. Researchers could focus on designing interventions that are scalable and possible to implement and use within the scope of regular instruction.

Last, because most individual intervention components were explored in only a few studies, relatively little is known about the transferability of effects across contexts, as well as long-term effects. Here the taxonomy by Winstone et al. (2016)

could support future research by providing a stronger theoretical organization and coherence for studies to come.

Factors Moderating Students' Engagement with Feedback

In this section, moderators that have been seen to influence how students engage with their feedback will be discussed. Winstone et al. (2016) note that despite several examples of how to create "actionable feedback," there is still limited information for educators on how to change learners' behavior from passive to more active receivers and seekers of feedback. To bridge this gap, Winstone et al. (2016) presented an overview of factors that might positively influence students' proactive recipience.

Although meta-analysis might be considered the optimal methodology for comparing different moderating variables, both Jonsson (2013) and Winstone et al. (2016) used a narrative review approach. This was justified by the large number of empirical studies and potential moderators that both reviews included, making full coverage of all potential moderators unfeasible. However, while Jonsson (2013) conducted a thematic analysis of the studies reviewed, in Winstone et al. (2016) the findings were presented according to a model of interpersonal communication. In the current chapter, the latter model will be used to organize our discussion, which means that factors are grouped into the following categories: receiver variables, sender variables, variables that pertain to the message, and those that relate to the learning context (Figure 24.1). The reader should keep in mind that these categories are purely organizational entities. Furthermore, within these categories, findings from both reviews are presented, as well as findings from other relevant sources. In particular, Lipnevich, Berg, and Smith (2016) have proposed a model that has some overlap with

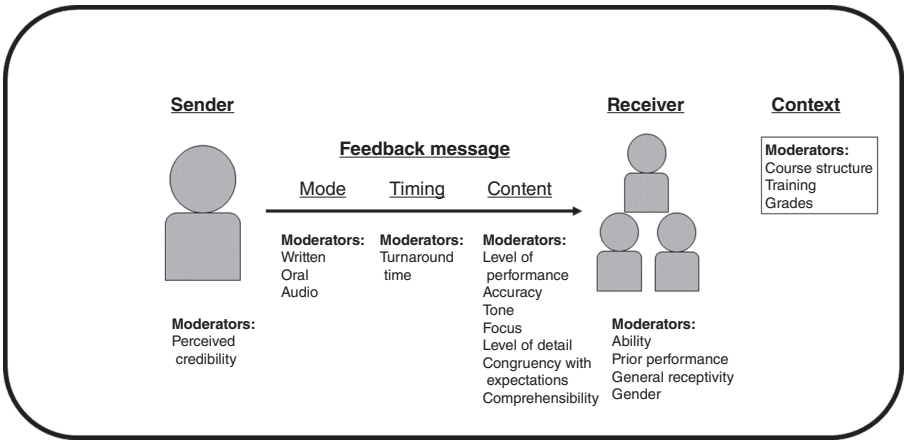

Figure 24.1 *An overview of factors moderating students' engagement with feedback.*

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the communication model used by Winstone et al. (2016), but focusing more on the mechanisms guiding student receptivity to feedback. The "feedback-student interaction model" by Lipnevich et al. (2016) will be used to elaborate further on the categories below where appropriate.

The Receiver

Individual differences among students may influence how feedback is used. We know this already from studies on the effectiveness of formative feedback, where low-achieving students may benefit from feedback with different characteristics than high-achieving students (e.g., Shute, 2008). Lipnevich et al. (2016) therefore raise the question: While acknowledging that some part of the feedback process is likely to be context dependent, are some students generally more receptive to feedback as compared with others? And if this is the case, how modifiable is this characteristic? These authors suggest three factors that may affect how students engage with feedback: ability, prior performance, and general receptivity.

A number of moderators associated with ability and prior performance have been investigated empirically, and findings suggest that students with positive academic self-concept, high self-efficacy, good self-regulation skills, and high achievement are more likely to engage with their feedback. There are exceptions, however, to this general picture, and some suggestions on how to improve students' engagement with feedback are based on theoretical considerations only and have not been empirically tested (e.g., Handley, Price, & Millar, 2011). It is therefore difficult to draw any firm conclusions about how students' individual characteristics may serve as moderators of proactive recipience.

Regarding general receptivity, this factor has been shown to be a strong predictor of emotional reactions to feedback (Smith, Berg, Kendall-Smith, & Lipnevich, 2013). It has also been suggested that students need to have a clear understanding of the purposes of feedback and carry responsibility for realizing the potential benefits of the feedback. Without having a good grip on these feedback fundamentals and, hence, willingness to engage, students are presumably less likely to use feedback productively. Studies in this category are usually based on interviews with teachers, asking about their perceptions of students' use of feedback (e.g., Bailey & Garner, 2010; Carless, Salter, Yang, & Lam, 2011).

In addition to the factors suggested by Lipnevich et al. (2016), there are indications of gender differences, where females are more likely to engage with their feedback as compared with males (e.g., Baadte & Schnotz, 2014).

The Sender

Just as there are individual differences among students that may influence how feedback is used, there are individual differences among teachers (and other feedback providers). This is a separate category in the model by Winstone et al. (2016) but part of the context in the Lipnevich et al. (2016) model. One factor raised by both, however, is trust, which has been operationalized in terms of

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perceived credibility of the teacher. For example, Bing-You, Paterson, and Levine (1997) presented several aspects of the sender, which according to the medical students interviewed would cause them to disbelieve or discount their feedback, even if delivered adequately. These aspects are students' perceptions of sender characteristics (e.g., trust and respect, level of knowledge), students' observation of sender behavior (e.g., attention, uneasiness), the content of the feedback (e.g., focus on insignificant areas, feedback inconsistent with perceived performance), and the method of delivering feedback (e.g., judgmental, in a group setting).

Another situation where the sender of feedback is of great importance is in peer assessment. A recent review by Panadero (2016) analyzed a range of social and interpersonal effects of peer assessment. One of the key factors for student involvement in peer assessment is not only the trust in the other as an assessor (i.e., receiving feedback and/or a grade from a peer) but also the trust in oneself as an assessor. These aspects are discussed by Panadero, Jonsson, and Alqassab in Chapter 18 in this volume.

The Message

Characteristics of the feedback message are a variegated collection of factors, a number of which have been investigated in relation to student learning (e.g., Hattie & Timperley, 2007). First, a distinction can be made regarding how the message is delivered, when it is delivered, and the content of the feedback.

In regard to how the message is delivered, most people may associate feedback with written comments. However, feedback messages can be delivered in a variety of ways. Even if we limit ourselves to written feedback, this can be delivered as a coherent narrative, as annotations in the margin, as drawings, symbols, color markings in rubrics, etc. Similarly, oral feedback can be delivered face to face, via Skype, or as audio recordings. Modern smartphones allow for easy video recording and editing, making it possible to create multimedia feedback, for instance, by filming a student during physical education and highlighting incorrect movements with colors, arrows, or lines. Only a few of these ways to deliver feedback have been systematically investigated, and neither Winstone et al. (2016) nor Lipnevich et al. (2016) include this category of moderating factors. However, in the review by Jonsson (2013) it is reported that students claim to appreciate a combination of oral (preferably one-on-one) and written feedback, but that the time constraints of most teachers make individual dialogue with each student problematic. The use of audio feedback, on the other hand, has been shown to alleviate these difficulties as it provides a way to increase the amount of feedback communicated to the students as compared with written feedback, without being more time consuming (Kirschner, Vanden Brink, & Meester, 1991; Pearce & Ackley, 1995; Huang, 2000).

Regarding the timing of feedback delivery, Winstone et al. (2016) claim that students typically engage less with their feedback if they have to wait longer. Lipnevich et al. (2016), on the other hand, note that findings about preferable

turnaround times for feedback are inconclusive, because this feature interacts with other factors, such as task difficulty. In her review on formative feedback, Shute (2008) suggested using immediate feedback for difficult tasks, while using delayed feedback for relatively simple tasks. However, this broad categorization of feedback as either immediate or delayed may sometimes be misleading. A good example is when students receive automatized computer feedback, which is delayed by thirty seconds (see, e.g., Schroth, 1992), as compared with students handing in assignments for teacher feedback who may have to wait for days, or even weeks, to receive their feedback. It is also difficult to envision how to provide immediate feedback for complex (and presumably difficult) tasks, such as an argumentative essays, without compromising the quality of the feedback.

Regarding the content of the feedback, the message can vary along several dimensions, such as whether it is concise or extensive, specific or vague, detailed or sketchy, positive or critical, individualized or general, focused on content or structure, personal or neutral, giving advice or asking questions, etc. Most of these characteristics have not been systematically investigated and it is therefore not known which factors may contribute the most to students' engagement with feedback. The following section will describe the subdivisions by Lipnevich et al. (2016), which include aspects such as level of performance, timeliness (discussed above), accuracy, tone, focus, level of detail, congruency with expectations, and comprehensibility.

Lipnevich et al. (2016) suggest that the extent to which feedback provides information about students' performance in relation to existing learning objectives, and whether this information is positive or negative, needs to be considered. Similarly, Winstone et al. (2016) propose that high-quality feedback (i.e., feedback clarifying what good performance involves and providing opportunities to close the gap between current and desired levels of performance) should be more important as compared with quantity. However, no references are made to empirical research in order to back up this assertion. Instead, reference is made to a study where students were *not* more likely to use feedback that they perceived to be of higher quality (Bounds et al., 2013). Consequently, the influence of high-quality feedback, as defined above, needs further attention by future research.

Regarding positive versus negative feedback messages, Winstone et al. (2016) discuss studies showing that students engaged more with positive feedback and found it more useful, but that senior students were less dependent on the valence of the feedback as compared with junior students. Jonsson (2013), on the other hand, suggests that there might exist a conflict between what students prefer and what is likely to contribute to productive learning and that the positive versus negative framing of the message can be regarded as yet another instance of this conflict. For instance, whereas many students prefer positive comments, such comments have been shown to lead to less change (Ferris, 1997). Researchers also recognize that students need critical comments in order to improve, even if these comments may be perceived as negative (Drew, 2001; Higgins, Hartley, & Skelton, 2002; Whitington, Glover, & Harley, 2004; Holmes & Papageorgiou,

2009). In sum, simplistic approaches to the valence of feedback might not capture the complex interactions involved, and more holistic approaches may therefore be needed.

Another aspect of content is accuracy. Lipnevich et al. (2016) suggest that students' engagement with feedback may be affected by whether the students perceive that the teacher has made an accurate assessment of their work. Examples include instances when teachers give comments that are not relevant, erroneous, or do not match the quality of students' work.

An aspect of the message that has proven to be important for moderating students' use of feedback is its tone. Winstone et al. (2016) give examples of ineffective approaches, such as unmotivational, unconstructive, and insensitive comments. Jonsson (2013) specifically highlights an authoritarian tone as less productive for students' use of feedback. To be perceived as less authoritative, teachers need to avoid an insensitive tone, giving mainly evaluative comments, and using imperatives. With regard to students' emotional reactions, Lipnevich et al. (2016) suggest that tone might be the single most critical aspect of feedback.

Yet another aspect is the focus of feedback, where Winstone et al. (2016) make a distinction between task-level and process-level feedback (Hattie & Timperley, 2007). They propose that process-level feedback should have greater utility as compared with task-level feedback.

However, as shown by Walker (2009), students may find task-specific feedback more useful when revising work that is going to be handed in again, but prefer process-level feedback for future assignments. This means that process-level feedback is not necessarily more useful per se. Instead, what is perceived as most useful depends on what the feedback should be used for. If the students are engaged with one particular assignment, which is to be revised, they want more task-specific feedback so that they can make improvements for the final version. If the particular task is not to be handed in again, but students are required to apply their skills on new assignments instead, they are likely to find process-level feedback more useful (Jonsson, 2013).

The sixth aspect of content put forth by Lipnevich et al. (2016) is the detail and extent of the feedback that students receive. Both Jonsson (2013) and Winstone et al. (2016) note that student surveys indicate that the amount of feedback is important for student satisfaction with feedback. However, even though many students seem to prefer a lot of feedback, the length of the comments does not necessarily influence whether students use the feedback. Less important but copious comments may also overshadow more important aspects of feedback (Vardi, 2009). Still, longer comments may have a positive impact on revisions – if they are used (Ferris, 1997; Treglia, 2009). According to Jonsson (2013), this is another instance of the conflict between what students prefer and what is likely to contribute to productive learning. While there is substantive evidence that students appreciate specific, detailed, and individualized comments on their own work and that they make both more revisions and more accurate revisions if told exactly what to do, revisions based on such

highly specific and directive feedback do not necessarily improve the quality of students' texts.

The seventh aspect of content is comprehensibility. As evident from research in this area, many students have problems understanding the meaning of the terms that teachers use or the criteria that teachers make reference to, ultimately hindering their engagement with feedback. Both Jonsson (2013) and Winstone et al. (2016) suggest that academic terminology is one major barrier in this regard. For instance, Winstone et al. (2016) claim that educators use the language contained within formal grading policies and grade descriptors as a basis of their feedback, and this language is generally inaccessible to students. Therefore, students need to become familiar with the specific terminology in order to better understand feedback. Strategies for achieving this are discussed later in the section "Facilitating Proactive Recipience: Recommendations for Practice."

The final aspect of content is congruency with expectations, which means that this aspect involves an interaction between the student (i.e., his or her expectations) and feedback. As proposed by Lipnevich et al. (2016), there may be a match or a mismatch between what the student receives and what he or she expected at any level of performance. Mismatches, in particular, may heavily influence whether or how the feedback is acted on. A special case of congruency with expectations involves the interaction with another aspect of feedback, namely, whether the qualitative feedback is accompanied by a judgment expressed on a scale, such as scores, marks, or grades. There is research indicating that grades often trigger disappointment, which may reduce students' future engagement, and that such emotional responses depend on students' expectations (Kahu, Stephens, Leach, & Zepke, 2015). This influence of students' grade expectations has also been shown to affect students' processing of feedback (Pitt & Norton, 2016). Students' reactions to grades will be further explored in the next section, as an aspect of the context.

The Context

Lipnevich et al. (2016) make reference to the work of Yang and Carless (2013) when addressing the contextual factors that might influence students' engagement with feedback. These authors suggest a dynamic interplay between the content of feedback, the social and interpersonal negotiation of feedback, and the organization and management of feedback (i.e., a structural dimension). From their analysis, three different levels of barriers for dialogic feedback are outlined (i.e., student-, teacher-, and institution-related barriers).

One of the major institutional-related constraints for dialogic feedback is the modularized structure in higher education (Carless et al., 2011; Yang & Carless, 2013), which is an aspect also noted by both Jonsson (2013) and Winstone et al. (2016). Yang and Carless (2013) suggest that "Integrated multi-stage assignments generally facilitate timely comments and student uptake of feedback. An assignment divided into two or more phases permits iterative feedback cycles

which facilitate engagement with feedback and the prospects of improvement from one task to the other" (p. 291).

However, as exemplified by Taras (2006), who collected data from six undergraduate programs across three faculties comprising 166 courses and 426 different assessments, only five of these 166 modules allowed for an iterative feedback cycle. Further, students seem to be given feedback at the very end of (or even after) the course, which means that there are no opportunities for them to use their feedback in that specific context. As opposed to situations where the opportunity for revision is mandatory, feedback in these situations is often perceived as irrelevant by the students (Jonsson, 2013; Winstone et al., 2016).

Another feature of the context described by both Jonsson (2013) and Winstone et al. (2016) is related to students' insufficient training in the use feedback. This is revealed in surveys asking students whether they feel that they have received adequate guidance on how to understand and use feedback (e.g., Bevan, Badge, Cann, Wilmott, & Scott, 2008) and in interviews with students and through think-aloud-protocols (e.g., Porte, 1996; Furnborough & Truman, 2009).

A third aspect of the context relates to whether the feedback is accompanied by a judgment expressed on a scale, such as scores, marks, or grades. According to Winstone et al. (2016), students often focus heavily on the grades at the expense of their engagement with the qualitative feedback. In a number of studies, students also claim to appreciate grades, especially when they are accompanied with an explanation (e.g., Walker, 2009; Ferguson, 2011). Still, grades are problematic for several reasons. For instance, grades make many students do their best to comply with the teacher's comments, even if this means compromising their own intentions (e.g., Hyland, 1998; Zhao, 2010). Moreover, when the effort of compliance is perceived as too large, many students make changes they think will pay off in terms of grades (Dohrer, 1991; Porte, 1996; McDowell, 2008). This strategy typically changes students' focus away from larger, text-based revisions, toward smaller (and safer) surface revisions (e.g., Ashwell, 2000; Williams, 2004).

Other problematic effects of grades have to do with the fact that receiving a low grade can have detrimental effects on students' self-perception and that students receiving high grades do not read their feedback when they are satisfied with the grade awarded (e.g., Brown, 2007; Vardi, 2009). For example, Lipnevich and Smith (2009a) investigated the effects of providing grades in combination with different feedback conditions for psychology students. They found that detailed descriptive feedback was most effective when delivered without a grade. Furthermore, in follow-up focus group interviews (Lipnevich & Smith, 2009b), students consistently agreed that detailed feedback was the most effective condition. In fact, grades were seen as potential hindrances to improvement. Students who received low marks on their first draft were often discouraged, whereas students who received high marks had little motivation to modify their work. In the latter case, some of these students were afraid that changes might result in lower grades.

Taken together, current research suggests that grades may constitute one of the major barriers to productive use of feedback. Grades have been shown to interact negatively with students' engagement with feedback in several ways, such as (1) students compromising their own ideas in order to comply with teachers' comments, (2) students focusing on surface changes in order to "play it safe," (3) grades affecting self-perception of students with low self-esteem, and (4) grades triggering negative emotions, especially when receiving a lower mark than expected.

Summary and Conclusions for Future Research

There are a very large number of factors potentially affecting students' engagement with feedback. In this section, the models provided by Lipnevich et al. (2016) and Winstone et al. (2016) have been used to organize the findings into a more coherent structure. These models can also be used to guide future research in order to support a more systematic exploration of these factors.

To date, most factors have been investigated by only a few studies. Winstone et al. (2016) therefore conclude that any of their categories (i.e., receiver, sender, message, or context) may substantially moderate students' proactive recipience, but for the individual moderators evidence is not so strong in terms of quantity and/or strength. This would imply that basically all research in this area is welcome. However, it is not possible to investigate all conceivable factors in all imaginable situations and contexts, and – as suggested by Carless et al. (2011) and as evident from the discussion about grades above – there are also significant interactions between the categories in the model used by Winstone et al. (2016). Moreover, not all factors are possible to affect within the frames of regular instruction. This means that it is not feasible, and maybe not meaningful, to keep addressing each of these factors in isolation from each other. Instead, it could be wise to focus research on factors that (1) potentially have a more comprehensive effect, (2) can be combined into "batteries" that address barriers at more than one level according to the model by Yang and Carless (2013), and (3) are possible to implement and/or affect within the frames of regular instruction. Examples of such factors will be provided in the next section outlining possible ways to facilitate students' engagement with feedback.

Facilitating Proactive Recipience: Recommendations for Practice

As evident from the above review of students' engagement with feedback, current research is scattered across a landscape of many different possible moderators, where each individual moderator is investigated in only one or a few studies. In the review by Winstone et al. (2016), this is also how the findings are presented, making it difficult to formulate any tentative recommendations for how to facilitate students' productive use of feedback.

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The review by Jonsson (2013), on the other hand, is based on a thematic analysis of the studies, which means that the findings are presented as themes transcending several studies. It is still not possible to evaluate the relative strength of these themes, but recommendations can at least be made based on findings from more than a few studies. In the following section, we present overarching themes that have been grouped into three important conditions for productive use of feedback: (1) feedback is perceived as useful by the students; (2) students know what to do with the feedback they receive; and (3) feedback is delivered without a grade.

Condition 1: Feedback Needs to Be Perceived as Useful by the Students

The most commonly expressed reason for not engaging with feedback is that the students do not find it useful. The reasons for not finding feedback useful may differ, however, and at least three major aspects of usability as perceived by the students can be identified.

The first aspect is whether students are required to, or have the opportunity to, use their feedback within the course or module. As mentioned above, students are often given feedback at the very end of (or even after) the course, which means that there is no opportunity for them to use their feedback within that particular course. Furthermore, feedback may also be highly task specific and bear no relationship to studies in future modules. The students tend to perceive such feedback as irrelevant to them and do not necessarily see the point of engaging with their feedback. This situation is in contrast with studies where students have been expected to use their feedback, either by making revisions of a task or by using the feedback on similar tasks in the near future, where most of feedback comments are in fact attended to by the students (e.g., Paulus, 1999; Zhao, 2010; Zimbardi et al., 2016). A fundamental requirement for facilitating productive use of feedback would therefore be to include the opportunity for students to use their feedback within the current course or module.

The second aspect of usability is whether feedback contains information that can be acted on. Students generally perceive feedback negatively if it does not provide enough information to be helpful (Drew, 2001; Higgins et al., 2002; Ferguson, 2011). Theoretically, high-quality feedback should scaffold improved performance and self-regulation, but as noted above, no clear connection has yet been established between the quality of the feedback (at least as perceived by the students) and students' engagement with feedback.

The third aspect of usability is whether feedback is understandable by the students. As noted above, many students have problems understanding teachers' use of academic terminology or technical jargon, preventing them from engaging constructively with feedback. On the one hand, it could be recommended that teachers avoid the language contained within formal grading policies and grade descriptors as the basis of their feedback, but, on the other hand, the subject-specific discourse is part of what students need to

learn and therefore cannot be avoided. However, research does suggest a number of ways for students to become familiar with the discourse and thus to better understand their feedback. For instance, providing model answers or exemplars along with the feedback, or by engaging the students in work with explicit assessment criteria, are examples of resources that can support students' understanding of the academic discourse (e.g., Case, 2007; Huxham, 2007). Another way for students to become familiar with the discourse is to engage in dialogue with the teacher, but time often does not allow for teachers to have dialogues with each individual student. However, some of the dialogue with teachers may be replaced or complemented by using audio feedback. As noted above, students are more likely to open audio files (as opposed to collecting written feedback) and to actually use the feedback (Ice, Curtis, Phillips, & Wells, 2007; Lunt & Curran, 2010). Furthermore, the amount of feedback communicated to the students with audio feedback has been reported to be significantly greater than the amount communicated with written feedback, without necessarily being more time-consuming (Kirschner et al., 1991; Pearce & Ackley, 1995; Huang, 2000).

Condition 2: Students Need Strategies for Using Their Feedback

A major obstacle for students using their feedback productively is the lack of strategies. Students may potentially apply a number of different approaches for using feedback, such as writing down points to remember for future assignments or make reflective analyses of teacher comments (Martens & Dochy, 1997; Hyland, 2001; Orsmond, Merry, & Reiling, 2005; Orsmond & Merry, 2011). However, this active use of feedback does not seem to be the primary choice for most students (e.g., Furnborough & Truman, 2009). Instead, a number of students use feedback passively, for instance, by making a "mental note" of the feedback. They may also use it indirectly, as an indicator of progress or in order to motivate themselves (Holmes & Papageorgiou, 2009; Williams & Kane, 2009; Pokorny & Pickford, 2010), or not at all by simply erasing problematic issues raised by the teacher (Hyland, 1998).

Although the lack of strategies is a major obstacle for proactive recipience, it seems to be amendable. For instance, according to Hattie and Timperley (2007), feedback can be provided at the self-regulation level, addressing the way students monitor, direct, and regulate their actions toward the learning goal. Such feedback may lead to further engagement with the task at hand and enhanced self-efficacy. Furthermore, Burke and Pieterick (2010) suggest that workshops based around past student assignments, including feedback, can help students prepare for future feedback. Students can work in pairs or small groups and the activity can be progressive, starting from more simple (corrective) feedback and advancing toward more complex aspects of academic writing (in higher education). They also suggest a number of strategies for students to get more out of their feedback. Examples are students reflecting on how they

have responded to feedback, breaking feedback down into positives and negatives, and/or preparing for tutorials.

Condition 3: Feedback Should Be Delivered without a Grade

Several researchers propose that students' engagement with feedback depends on the match between their expected and actual grades, such as students receiving high grades not reading their feedback when they are satisfied with the grade awarded. Receiving a low grade, on the other hand, tends to evoke feelings of disappointment and can have detrimental effects on self-perception of students with low self-esteem or self-efficacy. There are also a number of studies showing that grades make students less willing to challenge the teacher, which means that they do their best to comply with the teacher's comments, even if this may compromise their own intentions with the task. Moreover, when the effort is perceived as potentially too large, many students strategically focus on making changes that they think will pay off in terms of grades, typically changing students' focus away from larger revisions and toward smaller (and safer) surface revisions (Jonsson, 2013).

Summary and Implications

Three fundamental conditions for constructive engagement with feedback have been identified. First, students need to perceive feedback as useful. There are at least three different aspects of usefulness: (1) whether students are required to or have the opportunity to use feedback, (2) whether feedback contains information that can be acted on, and (3) whether feedback is understandable by the students. Second, students need strategies for actively using the feedback they received. Third, grades have been shown to interact negatively with students' engagement with feedback in several ways, affecting both learning/study strategies and students' self-perception.

Taken together, in order to support students' proactive recipience of feedback, teachers could (1) design courses where students can make use of their feedback, either by revising drafts or by using their feedback on similar assignments; (2) provide feedback that can be acted on, by giving either task-level feedback on drafts that are expected to be revised or process-level feedback on "recurring" assignments; and (3) support students' understanding of feedback by providing resources such as model answers, exemplars, or engagement with assessment criteria and/or by engaging in dialogue with the student. Since one-to-one dialogue is time consuming, this can preferably be complemented with audio feedback. Another possibility is to engage students in dialogue with their peers about feedback. Teachers could also provide explicit guidance on how to use feedback, for instance, by giving feedback at self-regulation level and/or by arranging workshops focusing on strategies

for using feedback. Finally, teachers could provide students with detailed feedback without an accompanying grade.

Conclusions

This chapter started by noting that the quality of students' engagement with and use of the feedback they receive is critical for taking advantage of the formative potential of feedback. Unfortunately, much of the research in this area indicates that students' engagement with feedback is usually not very productive. However, as we showed in this chapter, it is not an easy task to identify who is to blame for this situation. Students differ in their capacity and willingness to use feedback. Teachers and other feedback providers (e.g., peers) differ in their capacity to deliver high-quality feedback and in how trustworthy they appear to the students. The content, timeliness, and mode of delivery in feedback messages can be varied almost limitlessly, as can the context surrounding the feedback process. Furthermore, and adding to the complexity, the reasons for wanting students to engage with their feedback may also differ. Reasons identified by Winstone et al. (2016) include empowering students to assess their own strengths and weaknesses, thereby reducing their reliance on external sources of judgment ("self-appraisal"); understanding the grading process and using this to assess own performance ("assessment literacy"); translating goals into plans of action and reviewing and adjusting performance and strategies in order to reach these goals ("goal-setting and self-regulation"); and facilitating the motivation to read and understand the feedback ("engagement and motivation").

In the midst of this complexity, however, there is a nucleus that can be used as a point of departure for facilitating students' engagement with feedback. As suggested above, this includes providing feedback that is useful for the students, helping them to develop constructive strategies for using feedback, and avoiding grades on individual assignments. Furthermore, a theme transcending the rationale for the interventions reviewed is empowering the students to self-assess and self-regulate. This "sustainable feedback practice" (Carless et al., 2011) is a more long-term goal with feedback, as compared with improving student performance on specific tasks, courses, or educational programs. An important next step for research on students' engagement with feedback may therefore be to distinguish between strategies that support short-term and long-term (i.e., sustainable) use of feedback, so that we do not implement practices that make the students rely more on external sources of feedback in order to increase test results or other short-term achievement. Instead, we may need to, as suggested by Carless et al. (2011), push students to involve themselves in developing self-regulatory practices consistent with sustainable feedback. This, in turn, highlights the need for interventions supporting students' understanding of the purposes of feedback and the benefits of self-regulation, as well as

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practices scaffolding self-regulation strategies, such as peer feedback and self-assessment (Panadero, Jonsson, & Strijbos, 2016).

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