

Chapter 3 Students' Emotions in Feedback Engagement

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Abstract

Students' affective response to feedback is crucial for productive feedback uptake and improvement of academic performance. Yet, there is a lack of consensus about students' affect management in feedback processes. This chapter discusses the intricacies of students' affect in feedback processes and the possible directions for affect management in a high-stakes assessment context. It reports secondary three students' emotions with teacher feedback on essays and their way of coping with negative comments and disappointing results. Drawing on the data and existing research, we argue that students' affective engagement is complex, susceptible to their situated sociocultural context, and to an array of individual factors. What is needed is a more comprehensive approach to developing students' emotional maturity and achievement-oriented and growth mindsets. Recommendations are outlined to aid students' affect management in feedback processes at school.

Introduction

They may forget what you said - but they will never forget how you made them feel.

- Carl W. Buehner

In a modern K-12 class, teachers take on a plethora of roles beyond those listed in their employment contracts. As a near-constant presence in the classroom, an educator may be instructor, assessor, mediator, caretaker, nurturer, and role model. In any and each of these roles, feedback is a necessary aspect - making written and verbal responses, responding to questions, giving constructive advice, facilitating group work, and guiding individual growth. Alongside teachers are students - children and adolescents - whose emotions shape their learning in a robust way. From trusting to insecure, appreciated to disparaged, depressed to

hopeful, K-12 students experience a spectrum of emotions that mediate their interaction with teachers, peers, parents, and themselves in the learning process. For these reasons, teachers are tasked with making all students feel psychologically safe and respected in feedback processes to aid their socio-emotional growth (Hamilton et al., 2019; National Academies of Sciences, Engineering, and Medicine, 2020).

Any classroom interaction entails bidirectionality, be it teacher and student, student and student, or student and material. The process of feedback is evident in all of these, with the focus of our chapter on that of teacher and student. Feedback across a variety of instructional settings and learning environments has been the topic for numerous research studies (e.g., Hargreaves, 2013; Hattie & Timperley, 2007; Lipnevich & Smith, 2022; Turner & Schallert, 2001), with the general conclusion that it can be an effective instructional intervention that may improve student task performance and achievement (Lipnevich & Panadero, 2021; Panadero & Lipnevich, 2022). Although the typical scenario involves teachers providing students with feedback, students may intentionally seek feedback from multiple sources or self-generate internal feedback based on a variety of instructional tools, if they are motivated to improve performance.

Feedback is a differentiated construct whose elements can be complex and intertwined (Wisniewski et al., 2020; see Lipnevich & Panadero (2021) for review of most prominent feedback models). For example, Ryan and Henderson (2018) note power, discourse, identity, and emotion as some of the factors that make receptivity of feedback so complicated. Individuals' emotional states and psychosocial characteristics affect how feedback is received and implemented, and how learners set goals (Baumeister et al., 2007; Cassidy et al., 2003; Ilies & Judge, 2005). Emotions also have positive, negative, immediate, and long-term influences on learning - activating the amygdala and creating pathways for decision making (Baumeister et al., 2007; Pekrun, 2006).

Emotions in the learning environment impact students' ability to focus on, learn, recall, and utilize information, and represent an important outcome in and of themselves. The importance of emotions as a determinant of learning cannot be understated. It is obvious that emotions impact learning (King & Chen, 2019; Linnenbrink-Garcia & Pekrun, 2011; Meyer & Turner, 2006; Pekrun & Linnenbrink-Garcia, 2014; Tyng et al., 2017) and need to be considered when providing feedback. As our scope relates to performance feedback, it is important to understand its relation to achievement emotions.

This chapter sets out to explore students' affective engagement with feedback in a high-stakes assessment context. It begins with the Control-Value theory (Pekrun, 2006) to illustrate the connection between achievement emotions and learning, and the Revised Student-feedback Interaction model (Lipnevich & Smith, 2022) to discuss how psychosocial and individual factors could shape students' processing of feedback. Grounded in this conceptual framework, it examines students' emotions of feedback through the analysis of focus group discussion data. Specific focus is on how students' situated sociocultural and instructional contexts and individual characteristics impact their affective engagement. It concludes with implications for students' affect management in feedback processes.

Control-Value Theory

The Control-Value Theory of achievement emotions (CVT) is considered to be an exemplar in understanding emotions in the context of learning (Pekrun, 2006). There are two types of achievement emotions in the learning environment: (i) activity emotions which are the feelings about ongoing achievement-related activities; and (ii) outcome emotions which are the feelings triggered by the outcomes of these activities. Achievement emotions can also be momentary (state) or habitual (trait). CVT describes emotions as sets of interconnected psychological processes constituting affective, cognitive, motivational, and physiological dimensions (Pekrun et al., 2011). Two groups of appraisals are of specific relevance for achievement emotions: subjective control and subjective value. The former pertains to perceived control of achievement-related actions and their outcomes, whereas the latter relates to the subjective importance of achievement-related activities and their outcomes (Pekrun, 2006). CVT describes feedback as one of the major antecedents of student emotional responses, and there is a lot of support on the literature showing that indeed, feedback is what often triggers the chain of appraisals, emotional responses, and ultimately student performance.

For example, Wouters et al. (2013) examined the effect of feedback on students' motivational beliefs and emotions in a computer-supported collaborative learning environment. Their study found that feedback perceived as autonomy-supportive and provided in a timely and specific manner was associated with positive emotions and increased intrinsic motivation, highlighting the importance of providing high-quality feedback.

In a longitudinal analysis of cognitive appraisals, activity emotions, and math achievement, Forsblom et al. (2022) investigated reciprocal relations of the above constructs

over time. Analyzing data collected from over 1,700 students across three years, they got confirmation that students' value appraisals shape their emotional experiences. These experiences then affect their achievement. For example, they identified that perceived competence predicts enjoyment, anxiety, and boredom, which then impact achievement over time.

Most recently, Pekrun et al. (2023) examined the relationship between teacher feedback, school grades and students' emotions over five school years. They identified a positive correlation between high grades and positive emotions, and a negative correlation between low grades and negative emotions. These were true for individual students over time, and when comparing between students within the same environment. Highly relevant to this chapter, they saw that grades (numerical feedback) positively predicted positive emotions and functioned as negative predictors of negative emotions, respectively. In other words, feedback that students receive across instructional settings elicits a range of emotional responses.

Revised Student-feedback Interaction Model

As previously mentioned, not only do student emotions influence receptivity of teacher feedback, but that teacher feedback is an antecedent of student emotions. In fact, emotions and feedback operate in a constant loop as described by Lipnevich and Smith (2022). In their model (Figure 1), feedback happens in a specific context, varying depending on the academic domain, culture, or nature of the task. The provider or source generates feedback for the learner to consider. The learner receives this message and reacts to it based on *who* the learner is, *what* the message says, and from *whom* the message comes. Cognitive, affective, and behavioral processing interact with one another and result in self-feedback that leads to action. This response may lead to an improved performance on the task at hand, transfer of knowledge and skill gains to other tasks, or long-term learning. These are the actions, outcomes, and growth in learners' performance or the learners themselves.

[Insert Figure 1 here]

According to Lipnevich and Smith (2022), the learner reacts based on *who* they are, which is composed of their individual characteristics such as ability, receptivity, expectations, self-efficacy, motivation, and personality. Learner's *ability* may influence their own perception on performance, the teacher's choice of feedback delivery, and the student's anticipation of

feedback. Learner *receptivity* is their openness to feedback, which can be different in general and / or specific situations, i.e., both a trait and state characteristic. Honing in on the aforementioned ‘anticipation of feedback’, *congruency with expectations* creates the harmony or dissonance one receives from feedback. If it is in line with expectations, the learner can focus on the details of the feedback; however, a lack of congruency may lead to positive/negative reactions. *Self-efficacy* is the learner’s internal belief of success in a specific and defined task. In the context of feedback, a learner with high self-efficacy could absorb and utilize incongruent feedback if they are bolstered by positive past experiences. *Motivation* is the desire to be successful, even if self-efficacy is low. High motivation leads to more successful use of feedback. It is also worth noting that the manner of feedback considerably affects students’ willingness to learn (Pat-El et al., 2012). Finally, *personality* is the complex measure of traits that are often composed of the Big Five – Conscientiousness, Openness, Neuroticism, Agreeableness, and Extraversion. Of these, ‘conscientiousness’ and ‘openness’ have been shown to be strong predictors of receptivity, with ‘neuroticism’ serving as a negative predictor.

The aforementioned processes - cognitive, affective, and behavioral – are the crux of the model. Recent studies have posited that students’ interpretation and implementation of feedback should be the focus of teaching and learning (Hattie & Clarke, 2018; Jonsson & Panadero, 2018; Lipnevich et al., 2021; Winstone et al., 2017).

- Cognitive (and meta-cognitive) processing relates to students’ comprehension of feedback. That is, do they both comprehend and appreciate the utility of the information provided? These appraisals of the value and utility of the feedback will eventually influence affect and behavior.
- Affective processing is the emotional reaction that affects how feedback is processed, leading to specific behaviors and outcomes. In line with CVT, feedback can affect students’ emotions, and thus their achievement-related behaviors. When response to feedback is positive, students are more likely to spend time and effort comprehending what is being said (Brookhart, 2011). However, recent studies show that the relationship is not straightforward, with negative affect enhancing motivation and performance under certain conditions (Lipnevich et al., 2020).
- Behavioral processing depends on the first two elements and represents activities student choose to or not to act upon. For example, feedback that is comprehensible, useful, and is positively received, can encourage students to rework an essay.

Of these components, our main focus is on affective processing. Within the model, where feedback is an antecedent of emotion, and emotion influences student response, the conveyed message should be carefully curated. Elements of the feedback message in this model include timeliness, accuracy, level of detail, comprehensibility, focus, function, and tone (see Lipnevich & Smith (2022) for clarification).

The affect of the student alters feedback processing, both positively and negatively. For the most part, positive emotions bolster intrinsic motivation for learning, attention, flexible learning strategies, and self-regulation. On the other end of the scale, negative emotions usually reduce intrinsic motivation, lead to task-irrelevant thoughts and negatively impact flexible strategy use and self-regulation. It is important to note, however, that positive emotions can occasionally be a detriment to performance, and negative emotions may benefit performance (Pekrun et al., 2023). Given the complexity of students' psychosocial factors, emotions and feedback engagement, it is essential to explore students' feelings of performance feedback and the way their emotions shape their interpretation and response in a particular context.

School Context in Singapore

Singapore is an exam-oriented society where examination results determine students' access to educational resources and future employment opportunities (Wong et al., 2020). Students are required to sit for different national examinations throughout different stages of learning: Primary School Leaving Examination at the end of primary six; General Certificate Education O-Level or N-Level Examination at the end of secondary 4; and General Certificate Education A-Level Examination at the end of matriculation (Singapore Examinations and Assessment Board, 2022). Due to the scarcity of resources in the society, attaining outstanding performances in examinations becomes the ultimate goal and exerts intense stress on students and parents (Tan & Wong, 2018). Despite the Ministry of Education's (2022) withdrawal of all mid-year examinations at all school levels by 2023 to alleviate the impacts of examinations, multitudes of students and their parents value grades and marks over feedback and perceive feedback as a tool to enhance assessment results in high-stakes assessment events (Tan & Wong, 2018).

Academic streaming is a characteristic in Singapore schools in which students are allocated into Express, Normal (Academic) and Normal (Technical) classes (equivalent to high,

average, and low achieving groups respectively) according to assessment results. From the academic year of 2024 onwards, the streaming practice will be replaced by full subject-based banding (Ministry of Education, 2021) in which there will no longer be fixed classes for students taking all subjects but instead allow them to learn different subjects in different academic groups that best suit their learning interests.

Since the academic streaming was in practice at the moment of data collection, our project team conducted focus group discussions with Secondary three students in the Express, Normal (Academic) and Normal (Technical) English Language classes at five schools. For easy identification, we label them Schools A to E respectively.

Focus Group Discussion Data

To unearth students' affective response to teacher feedback on essay writing tasks, we conducted 15 focus group discussions with 45 students from the five schools (three focus groups from each school and three students in each group). During the discussions, they were asked about their immediate response upon receipt of graded assignments, reasons for their affective response, opinions about different types of teacher feedback, and preferred feedback practice. Three overarching themes emerged from our data analysis, including (i) influence of marks on feedback engagement, (ii) mixed emotions about unspecific praise, and (iii) desire for differentiated feedback. The themes are discussed below with pertinent students' quotes and the key insights into feedback engagement. All student names are pseudonyms.

Theme 1: Influence of marks on feedback engagement

When asked about immediate response upon receiving graded assignments, almost all student participants from the five schools said they first looked at marks rather than comments and their outcome emotions were triggered by the marks. The following representative quotes describe how they reacted to the marks and how their response influenced their engagement with feedback.

The first thing I look for is mark. 19 is okay, but I do not think it is an A, not even a B. I was very disappointed, so I went through each paragraph to find out the major problems. (Richard, Focus Group Discussion 2, School A)

If the mark is low, I know this work is not the best one and therefore I will devote more time and effort to read the feedback. If I am fine with it, I may not take that much time to look through the feedback because the work is already good enough. (Jennifer, Focus Group Discussion 4, School B)

We are raised in a system where we associate marks with our work and effort. If we fail, we think 'Did we not put in enough effort?' Marks of practice tasks do not affect us as much as exam marks because we still have time to improve before the exam. (Elle, Focus Group Discussion 13, School E)

Marks do not affect me at all honestly. They are a measurement tool telling whether you have improved or done worse. They only matter in exams ... it is good that teachers give marks on a practice, so we can gauge where we are and how we should improve. What affects me is knowing I am far off from where I should be. (Zoe, Focus Group Discussion 13, School E)

Two points could be inferred from the quotes. First, the students seemed to use marks to judge their goal fulfilment, and their outcome emotions would shape their engagement with feedback. When assessment results were below expectations, disappointment prompted them to read through teacher's error corrections and comments for problem identification. On the contrary, when marks were within expectations, their delight may not motivate them to read teacher comments as they may not see the need for feedback enactment. Second, achievement-oriented students such as Elle and Zoe regarded the marks of regular assignments as an indicator of their progress towards exam preparation. With this mindset, they would not be overwhelmed in the case of unsatisfactory results but take it as an opportunity to reflect on their investment of time and effort for task engagement. The data implied that individuals' goals and dispositions influenced their emotional response to marks and feedback.

Theme 2: Mixed emotions about unspecific praise

During the focus group discussions, the students voiced their views on different types of teacher feedback. The majority of them recognized the importance of error corrections in indicating major problems and demonstrating teachers' scrupulous attention to their work. However, their responses varied when unspecific praise was given in different contexts. The two quotes below capture their reactions to general compliments on written assignments.

'Good effort' this comment does not pull up my self-esteem and make me feel good about my writing. There are a few annotations on my work. Not much detail on how I can improve. (Rebecca, Focus Group Discussion 7, School C)

When I read 'decent attempt, keep it up', I felt great about my work, but this did not push me to further continue it. Scanning through the whole essay, he did not underline any sentence. I am used to having a lot of red scribbles around my work. I doubt if he went through it thoroughly. (Anna, Focus Group Discussion 7, School C)

From the perspective of Rebecca and Anna, unspecific praise was of limited use in encouraging continuous improvement because they expected teacher's concrete suggestions on how to advance writing. When they received graded assignments without highlights of errors and improvement advice, they were sceptical about the quality of marking. Yet, they felt differently when similar comments were delivered verbally in front of peers. The quote below described their feelings when they participated in the plenary feedback session via *Google Meet* during the COVID lockdown in 2021.

The teacher was going through everyone's answers and telling us the mistakes. Some were mocked for their silly mistakes. When it was nearly my turn, I felt scared. How to cope with it? When she said I did a great job but had something to improve, I was not embarrassed anymore. At least she praised me, I felt okay. (Mary, Focus Group Discussion 10, School D)

Compared to written praise, the verbal encouragement given in the whole-class discussion could increase Mary's psychological safety in feedback processes. Her fear of looking incompetent deterred her from seeking academic assistance from teacher. Her instance showed that students could lessen anxiety and be more psychologically ready for feedback when the session commenced with positive comments followed by discussion of problems.

Theme 3: Desire for differentiated feedback

At the end of each focus group discussion, the students were asked about their preferred feedback practice. Interestingly, students from different schools pointed to differentiated feedback as useful scaffolding to improve learning.

Teachers have to identify weaker students who need help and better students who do not really need help. Not to compare them but make it good for both sides. If you are a better student, you do not need examples and face to face talk. The teachers could focus more on the others to tackle their problems. Then the class can move forward together. (Peter, Focus Group Discussion 9, School C)

At the start of the year, teachers can have a Google form for us to indicate how we would like to receive feedback. If some prefer verbal feedback, teachers can spend time sensibly to engage students in dialogue. (Jennifer, Focus Group Discussion 4, School B)

My teacher makes us write a paragraph every day on Padlet. She gives us feedback; then we move on to the next one. Getting her advice is very helpful. I have a notebook to document her feedback and my paragraphs to see my improvement. This notebook becomes my own resource. (Martha, Focus Group Discussion 10, School D)

The main message of the quotes is that the students preferred customised feedback from teachers. The differentiated approach to feedback was believed to be mutually beneficial to students and teachers as the learning needs of the former could be adequately addressed and the latter's time for feedback provision could be better utilized. In Martha's case, getting ongoing tailor-made feedback on paragraph writing prompted her to revisit the feedback received and her work for metacognitive monitoring.

Discussion

In our quest to understand students' emotions in feedback processes, we used focus group discussion data to examine their affective engagement. Using the revised student-feedback interaction model (Lipnevich & Smith, 2022) to interpret our findings, we unravel the intricacies of their affect in feedback processing. Their engagement with feedback is susceptible to the wider sociocultural context, the context in which feedback is communicated, and an array of individual characteristics.

Under the high-stakes assessment environment, the young adolescents of the five secondary schools valued marks more than feedback. Their emotional attachment to marks impacted their receptivity and feedback behavior. This observation aligns with Boud and Molloy's (2012) views about the influence of grades on feedback engagement. However, contrary to the popular belief that low marks discourage engagement (Carless, 2006; Price et al., 2011), our findings revealed an alternative scenario. When assessment results were below expectations, the incongruence would prompt students to read through teacher comments to identify performance gaps. Inferred from the focus group discussion data, we speculate that three individual characteristics help to shape students' response to disappointing results.

The first characteristic is motivation to succeed in examinations. When students are highly motivated to perform well in practice tasks or assignments, disappointment may not dampen their enthusiasm but urge them to read through their work and all teacher feedback to understand their major problems (Lipnevich & Smith, 2022). It is noteworthy that motivation alone does not suffice to promote feedback engagement as other individual characteristics also exert influence over students' feedback processing.

The second characteristic is the coping strategies adopted by students during feedback processing. According to Folkman and Moskowitz (2004), the way individuals deal with

negative emotions and failure could influence their thoughts and behaviour under a stressful situation. Our student participants faced pressure when they failed to obtain expected results or their teachers discussed their task performance in front of peers. In the circumstances, the ability to manage stress appropriately shapes their engagement. As shown in the findings, Richard took the problem-focused coping strategy by examining his essay, teacher's error corrections and comments in detail to understand key problems. Mary utilized the same strategy by thinking about the strengths of her work and teacher's praise to relieve her anxiety in the discussion.

Harley et al. (2019) propose a model of emotion regulation that integrates the CVT with the dominant process model of emotion regulation, proposed by Gross (1998; 2015). The resulting model, Emotion Regulation in Achievement Situations (ERAS) describes five specific strategies that students utilize to cope with negative affect, primarily relating to test-taking, classroom, and studying: Situation Selection; Situation Modification; Attentional Deployment; Cognitive Change (encompassing Value Appraisal and Control Appraisal); and Response Modulation. They are briefly described here:

- 1) Situation Selection – taking actions in a situation that will lead to more desirable, or less undesirable, emotions. Example: planning to study in a library for its quietness.
- 2) Situation Modification – taking actions that directly change the physical situation, thus changing the emotional impact. Example: requesting an oral exam instead of a written one.
- 3) Attentional Deployment – re-/directing attention in order to influence the emotional response. Example: taking a brief mental break from a lecture for a return for concentration.
- 4) Cognitive Change – modifying appraisal to alter the emotional impact of a situation.

Examples:

- a) Value Appraisal – reappraising a boring lecture as important.
 - b) Control Appraisal – noting the positive amount of studying already achieved.
- 5) Response Modulation – directly changing a developed emotional response's components (experiential, behavioral, physiological). Example: taking mindful breaths.

These strategies, such as attention deployment and cognitive reappraisal, manifested themselves in the focus group discussions, demonstrating that the utility of this model is supported.

The third characteristic is individuals' personality. The instances of Elle and Zoe revealed the relationship between achievement-orientation, attribution style and emotion management. With a clear goal of attaining success in examinations, achievement-oriented students would not be frustrated by disappointing results in practice tasks at school and instead attributed lack of success to their investment of efforts and considered how they could perform better in subsequent assessment events. Teachers may want to tailor their feedback to students' individual characteristics, accounting for specific personality profiles.

Implications for students' affect management in feedback

Given the complex relationship of students' affect, situated context, and individual factors, we argue that effective affect management involves more than feedback crafting skills of teachers but development of students' capabilities and dispositions to handle negative emotions through regular classroom and feedback interaction (To, 2022). Drawing on our data, we put forward three suggestions to facilitate students' affect management in the school context.

The first suggestion relates to the timing of feedback. Although teachers usually return graded assignments with marks and feedback to students concurrently, students are prone to read marks first and not motivated to engage with feedback in case of disappointing results (Carless, 2006). The negative impact of marks or scores on learners' feedback engagement could not be ignored (Boud & Molloy, 2013; Lipnevich & Smith, 2009; Lipnevich & Smith, 2009a). To minimize such influence on feedback uptake, teachers are advised to withhold assessment results until students have interpreted and enacted teacher feedback (Mensink & King, 2020). This could be executed by setting adaptive release of feedback and marks for online assignments on school's Learning Management System (cf. Irwin et al., 2013) or providing students with feedback a few days prior to marks. The caveat is that since this arrangement differs from the customary practice, teachers had better explain the rationale for adaptive release to mark-conscious students and parents.

The second suggestion is concerned with the manner feedback is communicated to students. Martha, for example, became highly motivated to use feedback for self-regulation when she received ongoing tailor-made feedback and witnessed her incremental improvement throughout the school term. To implement differentiated feedback, teachers could use Google forms or other technological tools to identify individual students' needs at the outset of a school

term, provide personalised feedback based on individuals' performance in bite-sized tasks and let them experience success from feedback uptake.

The third suggestion is fostering individuals' resilience to cope with negative emotions in feedback processes. While individuals' personality traits are hardly altered in a single feedback discussion, teachers could make good use of classroom discourse to nurture students' dispositions. For example, prior to feedback provision, teachers could invite students with better affect management skills to share how they apply problem-focusing coping strategies to overcome negative feelings in the assessment process. During regular classroom interaction, teachers could help students develop achievement-oriented and growth mindsets by encouraging them to set long-term goals and guiding them to turn unpleasant assessment experiences to improvement opportunities for goal accomplishment. Only if students possess feedback resilience (To, 2016) could they manage affect effectively and act on feedback for continuous improvement.

Conclusions

This chapter has cast light on the complexity of young adolescents' affective engagement with feedback in a high-stakes assessment context. While the majority of students in our project valued marks or grades in the assessment process, some of them were able to manage negative affect in case of disappointing results. For example, some saw marks in practice tasks as a tool to gauge goal attainment in examinations, and some adopted problem-focused coping strategies to identify weaknesses and improve performance. The key to affect management lies in students' development of achievement-oriented and growth mindsets, coping strategies and feedback resilience through regular classroom and feedback discourse.

A richer understanding of students' emotions in feedback processes also sets the direction for teacher professional development. Rather than training teachers to be an error catcher, it may be more meaningful to increase the capabilities of teaching fraternity to develop students' emotional maturity and academic buoyancy in the assessment process. With sustained efforts and care, students could thrive on examination pressures and be ready for the challenges in the 21st century.

Questions for reflection

1. To what extent could your students cope with negative emotions in the feedback processes?
2. How do you develop students' achievement-oriented and growth mindsets in your school context?
3. What strategies would be useful for customizing feedback under time constraints and heavy workload?

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