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More Than a Feeling: Using Portraiture to Explore Undergraduate Students' Emotional Responses to Feedback

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Abstract: The purpose of this study was to examine students' emotional responses to feedback as it is being processed. We used the think-aloud method, allowing students to express what they are thinking and feeling as they read through their feedback provided by the instructor on an authentic classroom assignment. Feedback type, feedback valence, and emotional responses were coded. Six students verbalized emotional responses to their feedback. The emotional responses for these students were examined using the portraiture method -a critical, narrative story-telling analysis. The results suggest that the type of feedback (process-focused) was more often met with future-focused thinking compared to task-focused feedback. This was despite the study finding positive task-focused feedback was more likely to elicit positive reactions. The think-aloud method, combined with portraiture analysis allowed for a holistic view of the feedback process. A thorough write-up of the student portraitures are described, and the implications of this are discussed.

Introduction and study purpose

One of the main purposes of academic feedback is to address the gap between a student's current knowledge and a goal that their instructor has in mind (Hattie & Timperley, 2007). There is a great body of research highlighting the power of feedback in shaping students' academic success (Kluger & DeNisi, 1996; Wisniewski et al., 2020). Previous research has demonstrated that the framing of feedback can promote varying emotional responses. Positive feedback tends to yield positive emotions and negative feedback, negative emotions (Goetz & Hall, 2013; Lipnevich et al., 2021). Given the implications emotions have on students' uptake and use of feedback (Ajjawi & Boud, 2017; Henderson et al., 2019) teachers may avoid feedback that elicits a negative response (Ryan & Henderson, 2017).

A limitation of the research exploring the role of emotions in the feedback process is that measured response is at the end of a task/experiment. Therefore, there is a need for research that obtains a more holistic representation of feedback process (Lipnevich et al., 2021). The application of a think-aloud methodology could address this limitation. There is limited research using think-alouds when processing feedback (Mahfoodh, 2017; Máñez et al., 2019).

Our research builds on Mahfoodh's (2017) research by *exploring students' emotional responses to feedback as it is being processed using an authentic classroom assignment, using the think-aloud method.* To authentically represent what students are saying as they are processing feedback, we rely on portraiture (Lawrence-Lightfoot, 2005) to provide context while situating these emotional events within the larger feedback process. We explore patterns across these portraitures to illuminate whether different types of feedback or contexts are more or less likely to elicit positive or negative emotional reactions and/or useful/counterproductive actions. The construction of these portraits are grounded in typical inquiry and observation of broader educational processes occurring. Exploring portraiture in this environment examines five features: context, voice, relationship, emergent themes, and aesthetic whole (Quigley et al., 2015). In this study we provide four out of five of these features and recognize that the relationship between the participant and researcher is absent. The instructor was not present during feedback think-alouds to prevent additional information (i.e., more feedback) from being provided.

Participants and procedure

Data from this study comes from a larger study that included 16 undergraduate students from a 3000-level psychology course at a large midwestern university. Of these students, 6 expressed emotional reactions in their processing of feedback, and are the focus of this investigation. This study took place in a classroom, utilizing a class assignment, so demographic information was not collected to protect anonymity. Pseudonyms were assigned.

Following an article summary assignment for their course, participants signed-up for a think-aloud session with researchers who were not affiliated with the course. Participants met with the researcher and reviewed feedback on their assignment. Feedback was provided using in-text comments from the course instructor. Researchers did not provide additional feedback: their function was to administer the think-aloud session, following a script for consistency. Sessions were recorded and took place over Zoom.

At the beginning of the session, participants were provided an overview and purpose of the study. Participants practiced the think-aloud method. If silent for more than 5 seconds, the prompt was given "What are you thinking right now?" The researcher then provided the student a copy of their assignment with the embedded feedback, asking the participant to think aloud as they processed the text. Think-alouds were transcribed, and researchers noted when think-aloud utterances were in reference to the original assignment, or the feedback provided by the course instructor.

Data selection and analysis process

We identified moments where students had emotional reactions while processing the feedback. Each of these unique events allowed us to develop a description of the reaction utilizing what the student was saying and referring to (i.e., type and valence of feedback). We used these to create portraits of the different participants, using the specific emotional reactions within the context of the larger feedback process.

For analysis, we relied on the portraiture method. Portraiture is a narrative form of story-telling and has been used as an alternative format or lens for examining various issues and topics in education (Lawrence-Lightfoot, 2005). Portraiture also provides a methodical and conscientious approach to describe and analyze data. This approach is useful as we intend to highlight the nature of students' emotional reaction to feedback as it happens, while also connecting those actions to students' proposed use of the feedback (when applicable).

Results

Feedback provided by the instructor that resulted in an emotional response was categorized into four types identified by Hattie and Timperley (2007): task (also known as corrective), process, self-regulatory, and self-level (praise). All types of feedback that students interacted with were given a valence. This indicated whether the feedback provided was based on something the student did correct or incorrect. The portraiture write-up includes what students chose to interact with (i.e., type of feedback, valence, assignment, etc.) as well as primarily focusing on any emotional reactions. Emotional reactions were categorized into positive or negative affective reactions.

Portrait of Truman's Think-Aloud Emotional Responses

Truman interacted with their feedback 23 times; most was task-based, a few interactions with regulatory feedback, and the remaining focused on process feedback. Much of the feedback was toward what Truman did incorrectly. Truman had one emotional reaction. They received correct task-based feedback that told them how well they did on a particular element on the assignment. They responded with appreciation for this, indicating that they found the feedback meaningful. However, this positive response was not met with Truman what we would expect: Truman looking back to see what was well done. In the absence of this connection between the feedback and the assignment, there is little utility created as the student does not know what to do on future work.

Portrait of George's think-aloud emotional responses

George interacted with their feedback 15 times; most was task-based, one unit was regulatory, and the remaining focused on process feedback. Majority of feedback was toward what George did incorrectly. George had one emotional reaction. They received task- based feedback. George read aloud a note about what they did correct. They responded with thanks. While this was a positive affective reaction, one might expect that George would review what they did well so that it could be replicated - they did not, they simply moved on.

Portrait of Adam's think-aloud emotional responses

Adam interacted with their feedback 17 times; most was task-based, they interacted with one piece of process, and the remaining focused on regulatory feedback. For this student, they only interacted with feedback that was about incorrectly. Adam's interaction with regulatory feedback was the same piece of feedback being read repeatedly.

Adam only displayed negative affection reactions, and in each instance of an emotional reaction, indicated understanding of a mistake in their work. Adam had 3 emotional responses during their think-aloud session. Their first emotional response prompted feelings of embarrassment (e.g., "okay that's embarrassing") after reading feedback that told them they were wrong (e.g., "this is not what happened…"). Following this reaction, Adam read another piece of incorrect, task-based feedback which prompted Adam to respond (e.g., "okay I did something wrong" and "I misunderstood the task."). Adam did not read the full piece of feedback provided before having an emotional reaction or commenting. This moment prompted Adam to have another emotional reaction, and after an expression of their misunderstanding, they displayed frustration. Despite only interacting with feedback on what Adam did incorrectly, and only showing negative affective responses, Adam still indicated that they understood their own misunderstanding of the task. While acknowledging a mistake may increase likelihood of use, they simply moved on to the next piece. This means that Adam knows there is something to be improved but does not know this is and may reoccur in the future.

Portrait of Ross's think-aloud emotional responses

Ross interacted with their feedback 19 times; most was task-based, little regulatory, and the remaining process feedback. Majority of feedback was toward what Ross did incorrectly. Through this think-aloud session, Ross struggled with how to align their work with expectations of the assignment. Ross had two emotional reactions during their think-aloud session. Their first was in response to receiving task feedback on something they had done well. Ross responded after reading aloud with a laugh and comment (e.g., "I like when I do things right."). As the session continued, Ross had feedback coded into two parts: a correct task-based piece, and an incorrect process-based piece. The task feedback let Ross know that they had a nice concluding statement while the process-based feedback said that they made a specific change in the paragraph. Ross expressed an emotion signifying they had done something wrong. Ross only responded to the negative process-based feedback. Following this, Ross re-read their assignment, and verbalized understanding, but continued by commenting on unsureness of how specific they need to be. In returning to their assignment, Ross created an opportunity to connect their work to the feedback. In this instance, it did not yield a resolution, but it presents an example of how instructors hope students would use feedback. Further, while Ross indicated a mistrust of their own ability, they frame this adaptively, seeing learning as an ongoing process.

Portrait of Polly's think-aloud emotional responses

Polly interacted with 20 pieces of feedback; most was task-based and the remaining focused on process feedback. Majority of feedback was toward what Polly did incorrectly. Polly had two emotional reactions in their think aloud. For both emotional reactions, they received specific, task-based feedback. Polly's first emotional reaction was positive, and immediately following this, had a negative affective response (e.g., "I often feel anxious about my… hooks."). While this was coded as a negative affective response (anxiety), this interaction shows Polly's thoughts as they continually process feedback received. Further in their think-aloud, Polly had a second emotional reaction in response to another correct task-based feedback. They read this aloud and expressed that this is nice because they are unsure about specificity in the assignment. Polly ended this response with a feeling of reassurance shown in a statement (e.g., "it is very reassuring to know that I am capable of doing it."). This observation, with their first emotional response demonstrates that even simple, specific, task feedback on assignments can lead to complex interactions and emotional reactions that may prompt larger reflections about current and past work.

Portrait of Matthew's think-aloud emotional responses

Matthew interacted with their feedback 11 times; most was task-based and the remaining focused on process feedback. Majority of feedback was toward what Matthew did incorrectly. They met feedback with tenacity and had strong knowledge of the utility of feedback for assignments. Despite valence of feedback for both types of feedback (task/process), Matthew displayed positive affective reactions and portrayed understanding of feedback. Matthew expressed three emotional responses in their think-aloud. First, Matthew interacted with a piece of task-based feedback that was on a citation they had done incorrectly. They indicated that this makes sense and described their rationale for the mistake. They then stated appreciation for the feedback. Their next response prompted two further positive affective responses. Instructor commented on something Matthew did well, and they expressed how that is nice to hear and about their mind space (e.g., "I like it when the first comment is positive…puts me in a better mind

space."). Matthew then commented on their insecurity about this portion of the assignment, and feedback on specificity is also nice to know. Matthew's last emotional reaction stemmed from feedback coded into two parts: correct, task-based feedback and incorrect process-based feedback. Matthew displayed positive affection reactions to both pieces. They referenced multiple times what they like about this feedback, mentioning again the specificity. They reflected on their writing process during this assignment and explained how useful the feedback was. Regardless of the type/ valence of feedback provided for Matthew, they responded with positive affective responses.

Discussion

Even though the scope of the present research is limited, it presents a vivid picture of the feedback process. We did not observe many students verbally expressing emotion to their feedback as they were reading (i.e., 6 out of 16). When we observed these, they tended to be negative. More important, these emotional reactions were rarely followed by utterances that signified useful application or understanding of feedback. This suggests in some conditions, when students face task feedback, they become less likely to process that information in a way that leads to use. To contextualize the implications, prior research has shown that young learners tend to prioritize seeking out task related information (Máñez et al., 2019), which may be particularly problematic if it is met with poor process strategies.

Our findings suggest that students will not have predictable, regimented emotional reactions to feedback. By exploring instances that initiate similar emotions and reactions, we can infer that this is due to the framing of feedback. Students seem to elicit positive reactions to correct task-based feedback, however this was rarely met with plans for future/imminent use. If we want students to respond to feedback in a manner that increases the likelihood of use, then we should consider using process-based feedback (Hattie & Timperley, 2007). Although students' emotional responses tended to vary in valence, it was more often met with future-focused thinking. As this happens, we are reminded of the goal of feedback: to bridge the gap between something known and something we want them to know.

The present study has implications far beyond academic use. This type of qualitative educational research can shift theory back to practice. These portraits in applied settings allow for instructors to examine student individuality in educational processes, and as shown, can provide common emerging trends that can affect and guide classrooms and lectures. While these portraits may appear simple in nature, they provided crucial findings for these students. By breaking down a construction of narratives grounded in educational and emotion theory, this examination provides us with information to guide future research while cultivating meaningful relationships (i.e., with feedback, instructors, peers) for students as they navigate and nurture a multitude of learning experiences and processes.

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