**On Feedback Perception and the Role of the Feedback Provider**

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Word count: 9540

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Track: Learning in Interaction

Date: 01 June 2022

**Abstract**

Feedback effectiveness has been studied extensively. However, the influence of inter- and intrapersonal factors in processing feedback lacks insights. In secondary education, students are confronted with plenty of feedback incidents, and their developmental stage is affected by a variety of interpersonal factors. This study adopted a mixed-methods design to investigate the intention to process feedback in 157 secondary school students by use of a convergent parallel model. Self-reported factors influencing students' feedback processing in response to an open question and quantitative data from a questionnaire were retrieved. The moderating effect of performance appraisal (elaborated/specific or general/concise) and valuation of the feedback sender (positive or negative) was investigated by manipulating vignette scenarios ($N = 4$). While perceptions of fairness, acceptance, and justice combined increased the likelihood of processing the feedback, no effect on emotional response was detected. Students appear to value constructive feedback but are more likely to process feedback when general and concise feedback is provided. Sender appraisal did not provide significant effects, thus, further research into the effect of the relationship between sender and receiver is required.

*Keywords*: Feedback perceptions, secondary school students, feedback content, mixed methods research, convergent parallel model

**On Feedback Perception and the Role of the Feedback Provider**

Feedback is an effective technique for improving learning by narrowing the gap between a learner's current performance or understanding and the desired performance of a specific task (e.g., Hattie & Timperley, 2007). Specifically, feedback provides information on the aspects of performance that are (in)correct or (in)complete to provide the person to whom the feedback is directed (hereafter referred to as the feedback receiver) with an idea of which aspects still need improvement to reach the desired outcome. Research shows that feedback affects learning, which is, however, dependent on the information that is communicated (Fong et al., 2018). Nevertheless, feedback is not always bound to success. In their literature review, Kluger and DeNisi (1996) identified that every third study on feedback reports negative results. Most powerful feedback effects, according to Wisniewski et al. (2020) occur if it assists the students to develop and improve information processing strategies and understanding, concerning the performance or task. While a substantial body of research has looked into the effectiveness of feedback (Eva et al., 2010; Hattie & Timperley, 2007; Winstone et al., 2017; Wisniewski et al., 2020), the exact mechanisms that promote the implementation of feedback to develop strategies to improve need more attention. Particularly, students' intention to process the feedback is necessary for the feedback to yield improvement, for which their willingness to improve is essential. Willingness to improve will therefore be seen as concurring with intention to process the feedback in this research.

Looking more closely at its processes, feedback contains an evaluation of how one performs a certain task compared to a set standard. This standard can be set based on a variety of factors (Narciss, 2013). It can be based on personal expectations or goals and is influenced by prior knowledge of both the task and personal abilities. The factors that influence this internal

evaluation of the discrepancy between current and intended performance refer to intrapersonal factors (Aben et al., 2019); which entail motivation to improve, the expectation of personal skills or the task, and the emotional response (i.e., fear of failure) (Baadte & Schnotz, 2014; Eva et al., 2010). As part of the execution of the task, the feedback receiver or learner simultaneously compares their execution based on the desired level of competencies and internally adjusts the representation of task requirements, if necessary. The self-generated information on the task execution can be referred to as internal feedback. In the interactive tutoring feedback (ITF) model, Narciss (2013) refers to this information processing of the feedback as the internal controller, which decides on the actions needed to be taken for further task execution.

However, feedback is not only generated by the self; often, it is an interactive process that includes another person's evaluation (feedback sender) on that task (Jussim et al., 1989). This evaluation is similarly influenced by intrapersonal factors like prior knowledge and expectations on the task, the receiver's abilities, personal standards, and the goals of the sender (Aben et al., 2019). The sender's point of reference and the current state of the task execution is processed in the external controller, which generates the feedback message involving the evaluative information and suggestions for improvement (Narciss, 2013). Thus, the internal controller receives both internal and external feedback messages based on which the intention to process the feedback is determined. Given the variability of the influence intrapersonal factors may have on a person's likelihood to process the feedback, this study first explores the effect of the receiver's feedback perceptions and the emotional response in more detail. It will then investigate how the characteristics of the sender may influence the effects, which will be discussed in more detail below.

**The Impact of Intrapersonal Factors on Feedback Processing**

*Self-Concept and Feedback*

Firstly, we will consider internal feedback. People have multiple self-concepts, which are broadly defined as "a person's self-perceptions formed through experience with and interpretations of his or her environment" (Shavelson et al., 1976, as cited in Marsh et al., 2017, p. 85). This includes feelings of self-confidence, self-worth, self-acceptance, competence, and ability, and can be understood as the collection of one's assumptions about the performance of a certain task. These self-perceptions influence the way one acts, which in turn again affects one's self-perception. The beliefs one holds about one's abilities depend on the context (Marsh et al., 2017), indicating our beliefs about our abilities might be high in one context but low in another, depending on the demands of the situation. These demands may be influenced by the evaluation of the task (by self or others), and the self-concept appears to decrease or increase in response to reinforcements and attributions one assigns to the task (is it important to be good at it?). This information contributes to the decision process within the internal controller on the actions needed to be taken.

Garcia-Grau et al. (2014) assert that self-perceptions are the main source of information for the self-concept and arise from interactions with others in our social environment. As social interaction is the main enhancer of most emotions (Andersen & Guerrero, 1996), it is possible that emotions are playing a role in the formation of the self-concept. Indeed, emotional response or affect appears to influence a range of important processes that are connected to the academic context, among which are learning strategies and academic achievement (Bieg et al., 2014). Thus, the emotions one experiences in a specific context have the power to influence how well one performs and how one perceives the self. The perception one has of their emotional state and their response to a specific situation can be referred to as the emotional self-concept

(Garcia-Grau et al., 2014) and relates to psychosocial adjustment. Given its possible effect on how the interaction between feedback sender and receiver is perceived, this factor will be kept constant for this study.

In the academic context, one thus holds an academic self-concept that entails perceived competence beliefs in writing, mathematics, and other academic skills a person holds about themselves, and how this predicts future performance, emotion, and motivation (Marsh et al., 2017). While the constructs of academic self-efficacy and self-concept are similar in these respects, the self-concept differs in that it is more focused on past experiences and social comparison (Bong & Skaalvik, 2003). Previous studies on the influence of the academic self-concept have identified links to learning goal orientations (Albert & Dahling, 2016) and overall performance (Baadte & Schnotz, 2014). Given that feedback processing is contextualized on the basis of many intrapersonal factors, it innately affects learning processes (Butler & Winne, 1995). The effect of academic self-concept on the processing of feedback appears to be subject-specific and reflected by an emotional response (Baadte & Schnotz, 2014; Marsh, 1990; McConnell, 2010). Specifically, Jussim et al. (1989) noted that to compensate for negative feedback (i.e., indicating insufficient ability), people increase their global self-esteem, place less importance on performing well on that task and reduce their sense of control over the execution. Likewise, Baadte and Schnotz (2014) note that a high academic self-concept positively correlates with confidence which is linked to the interpretation of the external feedback. On the one hand, self-concept may 'lessen the blow' of an external feedback message which negatively deviates from the internal message that would have normally exacerbated the emotional response. On the other hand, self-concept may decrease the likelihood to accept external feedback or deem it less credible and thus reject it (Baadte & Schnotz, 2014; Eva et al.,

2010). The feedback intervention theory by Kluger and DeNisi (1996) attempts to explain this paradoxical effect of decreased performance as a reaction to feedback for students with a high academic self-concept by relating it to an attention shift from the task to the self. External feedback that deviates from the self-perceived execution (i.e., internal feedback) requires the receiver to adjust their self-perceptions or alternatively reject the feedback. Either way, more focus is directed to the task which appears to require processing capacity directed at resolving the discrepancy, leading to the requirement of increased time investment. As the time needed to compensate for the discrepancy is not given, performance may decrease. These findings indicate the potential influence of the self-concept and will therefore be controlled for in the study to estimate the effect of the perception of the feedback and the emotional response to it.

### *Feedback Perception and Emotional Response*

Apart from the self-concept, numerous studies have investigated factors that lead to effective feedback uptake (i.e. receiving, reading, understanding, discussing, and disclosing a perception that the reports were useful) (Fong et al., 2018; Henderson & Ryan, 2021; Jonsson, 2012; Misiejuk et al., 2021) and identified what is perceived as most essential for effective feedback by the receiver. Concerning feedback effectiveness in education, it appears that students (as receivers) need to understand what the performance is aimed for, and their perception of usefulness is reflected in their assessment of the degree to which the feedback is specific, detailed, and individualized (Henderson et al., 2021; Jonsson, 2012). Perceiving the feedback as fair (Fong et al., 2018) and acceptable (Misiejuk et al., 2021) further contributes to the likelihood of being willing to process the feedback.

However, also the emotional response to feedback deserves attention, as emotion and motivation tend to influence one's processing strategies (Schwarz & Clore, 2007) and thereby the subsequent intention to process the feedback (Fong et al., 2018; Misiejuk et al., 2021).

Positive feedback (i.e., acknowledgment of the demonstrated ability) may enhance the emotional response and motivation as the receiver feels accomplished or reinforced in their self-views, presenting a beneficial aspect of feedback on learning (McConnell, 2010; Schwarz & Clore, 2007). Thus, if the feedback elicits a positive emotional response, the receiver is likely to process and adopt the external feedback. This effect of the emotional response on information processing can be explained by the self-determination theory, which attempts to trace self-determined motivation back to the fulfillment of the basic needs of autonomy, relatedness, and competence (Deci & Ryan, 2012). As the external feedback message is in line with or succeeds the internal feedback, the receiver's perception of competence increases and correspondingly their intrinsic motivation to perform well on the given task or performance. In turn, the motivation to improve may also be negatively affected by emotions, namely in the case of feedback that affirms or surpasses negative presumptions on the performance evaluation of the sender. To self-protect from the critique, the receiver may then try to avoid the negative effect by disregarding the feedback and thus have low intention to process it (Baadte & Schnotz, 2014; Kluger & DeNisi, 1996; Ryan & Henderson, 2018).

**The Impact of Interpersonal Factors on Feedback Processing**

The relationship between the feedback sender and receiver may not only affect how feedback is delivered but also the receivers' ability and/or motivation to process the feedback (Aben et al., 2019; Winstone et al., 2017). Each actor in the feedback exchange has to cope with their perceptions, ambitions, and expectations regarding a given task and adjust these to their interaction partner at the same time. Interpersonal factors (i.e., the relation between feedback sender and receiver) appear to influence the likelihood of the feedback receiver tolerating feedback about an error (Aben et al., 2019). The degree to which the feedback sender can

identify how they are perceived by the other (meta-perception) and where the differences lie between perception by the other and one's self-perception (meta-accuracy) influence how feedback is provided and processed (Aben et al., 2019).

Being able to anticipate what kind of feedback the receiver needs and being able to appropriately communicate it can potentially increase the receiver's engagement. However, the provided feedback is also strongly affected by the feedback sender's personal characteristics (intrapersonal factors) like their performance appraisal, motivation to provide effective feedback, and communication skills (Aben et al., 2019). Particularly performance appraisal has been linked to feedback effectiveness (Raemdonck & Strijbos, 2013). Hence, a sender that is perceived to provide valuable feedback based on their expertise appears to be more accepted by the feedback receiver but also leads to a more negative emotional response. The perception that the receiver has of the sender may additionally influence their willingness to improve and thus process the feedback, especially with regard to the credibility of the sender (i.e., source expertise) and the difference in status and power (Winstone et al., 2017). In other words, how much knowledge and experience the receiver assumes the sender has and how much they engage with the explanation or correction through feedback might determine the receiver's motivation of acting upon the provided feedback in terms of information processing.

### *Performance Appraisal*

External feedback here refers to the judgment of the sender on the task performance, which, as defined by Narciss (2008), can be either an elaborate and specific message on how the performance is evaluated or rather general and concise (as cited in Raemdonck & Strijbos, 2013). Elaborate and specific feedback will be defined as high performance appraisal, as it describes the evaluation in detail, containing hints to improve performance specific to the task.

Accordingly, low performance appraisal consists of little evaluative content, and rather than pointing to specific aspects that need improvement, it offers only superficial feedback. Research on the feedback message identified that it is more positively received if it contains much information, aiding the receiver to understand and improving the error (e.g. Mulder & Ellinger, 2012; Strijbos et al., 2010; Wisniewski et al., 2020).

Nonetheless, findings on the effect that performance appraisal has on the intention to process feedback are still ambiguous concerning its impact on the perception and emotional response to the feedback. While the positive influence of high performance appraisal has been linked to positive perceptions of the feedback, especially in terms of usefulness (Wisniewski et al., 2020), Strijbos et al., (2010) also point out cases where a higher negative emotional response is experienced resulting from high performance appraisal. The amount and specificity of feedback appear to have ambiguous effects on how one perceives the feedback, as it might confirm either positive or negative assumptions of one's performance. If it is perceived positively, one might appreciate specific comments on task performance, while, in the case of negative emotional response, specific and elaborate feedback may lead to a rejection of processing it.

### *Sender Appraisal*

Studies on the relationship between feedback sender and receiver suggest a potential to influence the emotional response to feedback and how it is received (Aben et al., 2019; Giffin, 1967; Montalvo et al., 2007). This might be due to the effect the representation of the sender has in the mind of the receiver. Having a positive perception of the sender (positive sender appraisal) may enhance the receiver's perceived usefulness of learning and their eagerness to improve (Montalvo et al., 2007). The potential effect of the appraisal of the sender by the

receiver on performance can be traced to the personal attraction, the dynamism, the expertise accounted to, and the assumed intention by the sender (Giffin, 1967). All these factors (i.e., sender appraisal) may affect the perception the receiver has of the sender and thus their likelihood of deciding to process their feedback.

**The Focus of the Present Study**

Although it is already well known that the intention to process the feedback to improve one's performance is affected by (a) the sender's characteristics (such as performance appraisal) and (b) subsequent perception of the feedback by the receiver and their emotional response, there is limited research on how the performance appraisal (i.e., general/concise or specific/elaborate) and the sender appraisal (i.e., personal attraction) influence the receiver's perception of adequacy, intention to process the feedback, and emotional response; especially in secondary school children (Winstone et al., 2017). Filling this gap could generate insights into the influence of the feedback sender on the receiver's processing of feedback. Given the potential influence of the academic self-concept on feedback processing, it will be controlled for in the present study in order to estimate the effect of the perception of the feedback and the emotional response to it. To better understand the motivation that students themselves report to intent to process feedback they receive from a teacher, an open question was incorporated into this study.

Firstly, it will be investigated to what extent the feedback receiver's perceived adequacy of, and emotional response to, the feedback influence their intention to process the feedback. Based on the presented literature, it is hypothesized that perceiving the feedback as useful, fair, and acceptable (H1), and a positive emotional response to it (H2) will increase the intention to process the feedback (see figure 1). As the literature presented ambiguous results on the effect

the performance appraisal has on the receiver's processing, it will be investigated to what

degree the sort of appraisal (high or low) influences the effect of both perception and emotional

response on the intention to process feedback. Similarly, the possible moderating effect of

sender appraisal will be inspected to determine the extent to which liking the sender affects

feedback perception and emotional response that lead to the intention to process the feedback

(see figure 2). Presumably, high performance appraisal increases the correlation between

perceived adequacy (H3), emotional response (H4), and intention to process the feedback.

Given the influence of perceived sender credibility (Giffin, 1967; Montalvo et al., 2007; Strijbos

et al., 2010), it is also expected that perceiving the feedback sender as competent and friendly

will increase the intention to process the feedback, both by positively influencing the perception

of feedback (H5) and the emotional response (H6).

**Figure 1**
*The Effect of Feedback Perceptions and Emotional Response on the Intention to Process the*
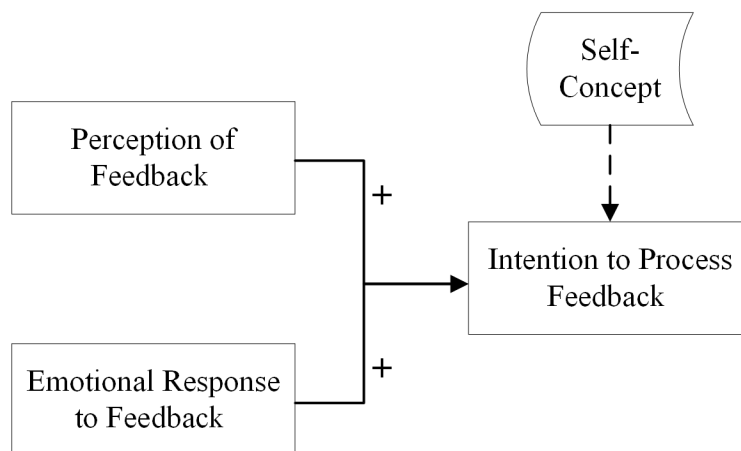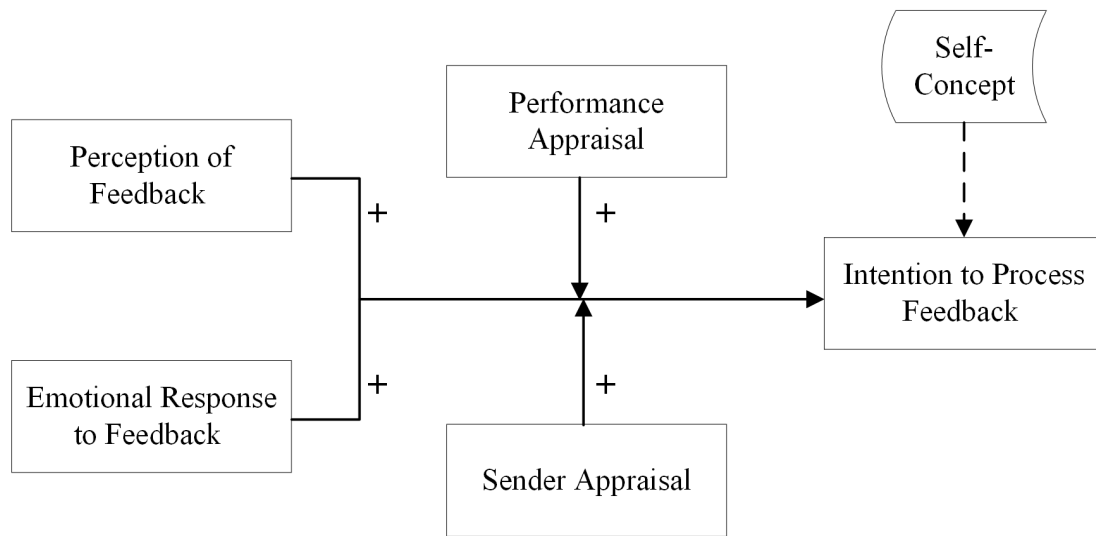        *Feedback.*

**Figure 2**

*The Moderating Effects of Performance and Sender Appraisal on the Relationship between Perception, Emotional Response, and Intention to Process the Feedback.*



**Method**

**Sample**

The initial sample consisted of 250 students from a secondary education school in Germany of which 93 were excluded due to not responding to all items (< 50% progress). From the remaining sample of 157 who responded to the open question, 35 students had to be excluded from quantitative analysis due to missing values, yet these were retained in the qualitative analysis to explore the factors influencing their intention to process feedback. The final sample of 122 students thus provided data for all items and included 73 females and 45 males, four did not state their gender (mean age: 17.81, SD = 1.10). Data were collected from students in the 11th grade ($N = 30$), 12th grade ($N = 40$), and 13th grade ($N = 52$) who are studying towards the highest degree of secondary school education in Germany, the Abitur. The school was selected based on its interactive approach to teaching which suggests, i.a., moderate use of feedback. After consent from the school management, the online surveys were distributed via

email by the respective school official and could be accessed on any computer through a link or a QR code.

**Research Design and Procedure**

This research, which was approved by the ethics committee of Educational Sciences of the University of Groningen, used a questionnaire design. Students were asked to read the description of the study (Appendix A1) and provide their active informed consent (Appendix A2). Written instructions on how to complete the questionnaire were provided. After indicating their identification with a gender category, their age, and their year grade, students' academic and emotional self-concepts were investigated. Additionally, prior to exposure to a feedback scenario, an open-ended question asked students to elaborate on the aspects that they deem important for implementing feedback from a teacher (e.g., lesson subject, relation to the teacher, the feedback content). This open-ended question was intended to obtain insights into students' attitudes and judgments towards feedback, which might enhance the understanding of willingness to process feedback. Subsequently, the students were presented with one of the four scenarios based on which they were then asked to report their perceived adequacy, emotional response, and intention to process the feedback. In each condition, there was a range of 29 to 40 participants: Positive sender and high performance appraisal ($n = 29$), positive sender and low performance appraisal ($n = 37$), negative sender and high performance appraisal ($n = 31$), and negative sender and low performance appraisal ($n = 40$). The students received no rewards or other incentives for their participation and the completion of the survey took approximately 15 minutes.

**Privacy and data storage**

The results of the study are treated confidentially and pseudonymized. No student name is mentioned in the thesis and the IP addresses were removed from the database immediately after downloading the data from Qualtrics. The data is stored in a secure environment within the University of Groningen, under the guidelines of the General Data Protection Regulation (GDPR) and the GMW Data Management Protocol.

**Materials**

To investigate students' perception of feedback, all participants were exposed to a hypothetical feedback scenario or vignette. A vignette study can be understood as "a short, carefully constructed description of a person, object, or situation, representing a systematic combination of characteristics." (Atzmüller & Steiner, 2010, p. 128). The scenario should thus represent a situation experimentally designed to contain the variables studied as close to reality as possible. In this case, as the object under investigation is the intention to process feedback in the academic context, a fictional student's work in the form of an essay is represented, including the instruction for the essay and the subsequent feedback by the fictional teacher. One of the central benefits of such studies is that both the internal and external validity are enhanced as a result of the experimental realism that is increased in the experimental vignette methodology (Aguinis & Bradley, 2014). Numerous studies offer examples for the effectiveness of vignette studies in eliciting experiences comparable to real experiences (Atzmüller & Steiner, 2010; Robinson & Clore, 2001; Strijbos et al., 2010). Based on the effectiveness of vignettes as experimental strategies (Aguinis & Bradley, 2014; Atzmüller & Steiner, 2010) and their proven effectiveness (Raemdonck & Strijbos, 2013; Strijbos et al., 2021), this design was deemed suited for the present study.

In each vignette, a fictional student "Toni" was asked to write an argumentative essay, which represents an authentic task in the secondary school curriculum. Subsequently, each student was presented with the essay that the fictional student wrote and randomly assigned to one of four different feedback responses by a fictional teacher after which they were asked to answer the Feedback Perceptions Questionnaire (FPQ; Strijbos et al., 2021) as if they themselves received that feedback depicted in the scenario. The feedback varied regarding the performance appraisal (high vs. low) by the fictional teacher of the fictional student's performance regarding specificity, conciseness, and appreciation expressed by the teacher in the feedback and the sender appraisal (positive vs. negative) in terms of personal attraction toward the teacher as perceived by the student. High performance appraisal in this scenario is characterized by descriptive information on the fictional student's task performance, delineating which aspects of the work were performed well and which specific aspects can be improved, including the actions needed to be taken. The low performance appraisal was depicted as concise and general bullet points that lack further comments on how to improve. Sender appraisal was indicated by the fictional student's liking or disliking of the fictional teacher that gave the feedback, about which they were informed when presented with the feedback. The four feedback vignettes were: (1) Feedback with high performance appraisal from a teacher who is perceived positively by the fictional student, (2) Feedback with low performance appraisal from a fictional teacher who is perceived positively by the fictional student, (3) Feedback with high performance appraisal from a fictional teacher who is perceived negatively by the fictional student, and (4) Feedback with low performance appraisal from a fictional teacher who is perceived negatively by the fictional student (see appendix B). As the sample consisted of only German students, all materials were translated into German.

**Measures**

*Self-concept*

Five items of the writing self-efficacy scale related to the academic self-concept (Marsh, 1990, modified by Aben et al., submitted), and three items of the adjusted AF5 scale, related to the emotional self-concept (García-Grau Pau et al., 2014), were used. An example item for the writing self-efficacy scale is "*Compared to others my age I am good at writing*" and has α = .87. An example item for emotional self-concept is "*I get nervous when a teacher asks me a question.*" and also demonstrates a moderate Cronbach's alpha with α = .80. The items for writing self-efficacy and emotional self-concept were answered on a visual analog scale that ranged from 0 (*fully disagree*) to 10 (*fully agree*).

*Feedback perceptions*

To measure participants' feedback perceptions, emotional responses, and intention to process the feedback, the multidimensional 18-item FPQ was used (Strijbos et al., 2021). This questionnaire measures feedback perceptions in terms of perceived fairness (3 items), usefulness (3 items), acceptance (3 items), willingness to improve (3 items), and emotional response (6 items). In line with Strijbos et al. (2010) and Raemdonck and Strijbos (2013), the items on fairness, usefulness, and acceptance (9 items) will be combined to form the variable *perceived adequacy* (α = .94). The items on willingness to improve (3 items) will compose *intention to process* (α = .88), and the six affective statements will be grouped into a categorical variable to express *emotional response*. Apart from the emotional response—which was measured categorically (1 = positive affect, 0 = negative affect)—, all items were measured on a continuous response dimension, ranging from 0 (*fully disagree*) to 10 (*fully agree*). Negatively phrased items were recoded for data analysis (see appendix B).

**Data analyses**

For the development of the questionnaire, the program Qualtrics was used and data analysis was performed with SPSS version 28.0.1.1. To identify the effects of the secondary school students' feedback perception of adequacy and their emotional response on their intention to process the feedback presented in the scenario, partial correlation analysis and multiple regression analysis were performed. The critical value for this study requires a significance level of $\alpha < .05$ based on a sample size of $N > 110$. For the correlational analysis, the effect size will be expressed by $r$, where .1 = small, .3 = medium, and .5 = large (Cohen, 1992). Furthermore, PROCESS v. 4.1 by Andrew F. Hayes (2022) was used for hierarchical multiple regression analysis to explore the moderating effect of the feedback sender's performance appraisal and the fictional student's appraisal of the feedback sender. The aim was to detect whether the influence of the relationship between feedback perception and emotional response on the intention to process the feedback is significant. Both variables on self-concept are expected to affect the approach to the (fictional) feedback and are therefore included as a control variable. The effect size for the variance in intention to process the feedback explained by the perception of adequacy, emotional response, sender appraisal, and performance appraisal, is expressed by Cohen's $f^2$, which indicates small (.02), medium (.15), or high (.35; Cohen, 1992) individual differences on intention to process.

The same population is researched concurrently by gathering information through open and closed-ended questions. By exploring both qualitative and quantitative data, this study adopted a mixed-method research (MMR) design of the convergent parallel type. This approach increased the scope of information to understand and explore students' intention to process feedback by allowing them to explain personal experiences that might have been overlooked or

unnoticed in solely quantitative or qualitative research. The benefits of MMR in learning sciences—in which feedback research is situated—have been thoroughly evaluated by Dingyloudi and Strijbos (2018), who delineate increased methodological flexibility, inclusion, and pragmatism as a result. To provide more insights into the motivation behind processing feedback and confirming the choice of variables to explore, MMR thus presented a powerful tool (Creswell, 1999). In response to the open question, participants provided insights into what they experienced to influence them on processing feedback—all students were required to respond to successfully complete the survey and received a character count of 100 to express their response—and also filled in the FPQ. The responses to the open question were coded into themes, which were then assigned to either performance appraisal, sender appraisal, or intrapersonal factors to relate the results to the gathered data from the FPQ.

## Results

### Qualitative Analysis

As part of the questionnaire, students were asked in the form of an open question to indicate what they deem relevant for themselves to process feedback from their teacher. After cleaning the data, 157 responses were grouped into categories that relate to the variables studied in this research. Figure 3 summarizes the main themes that students indicated would affect their intention to process the received feedback.

**Figure 3**

*Common Themes Reported to Influence the Intention to Process the Feedback.*
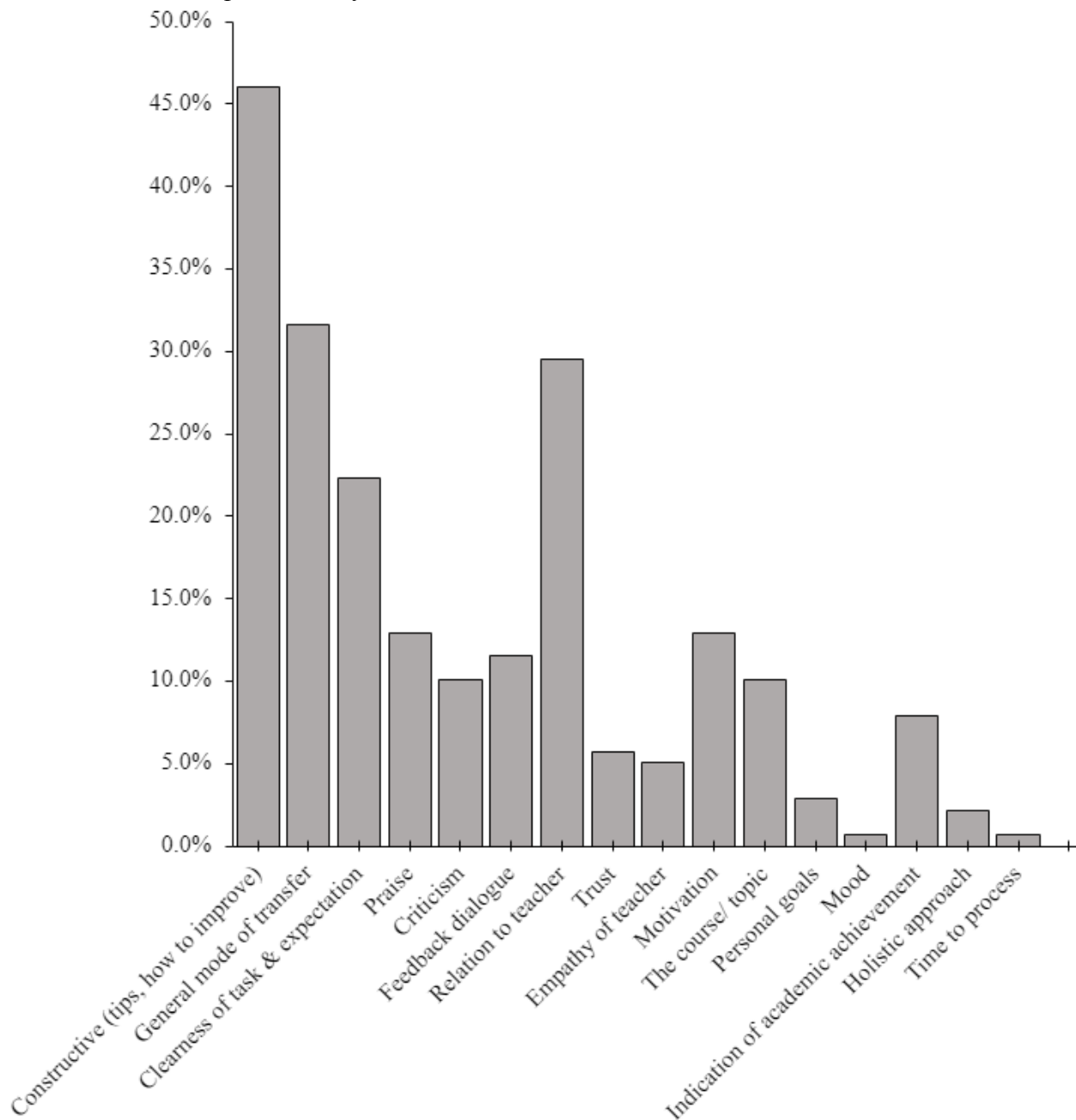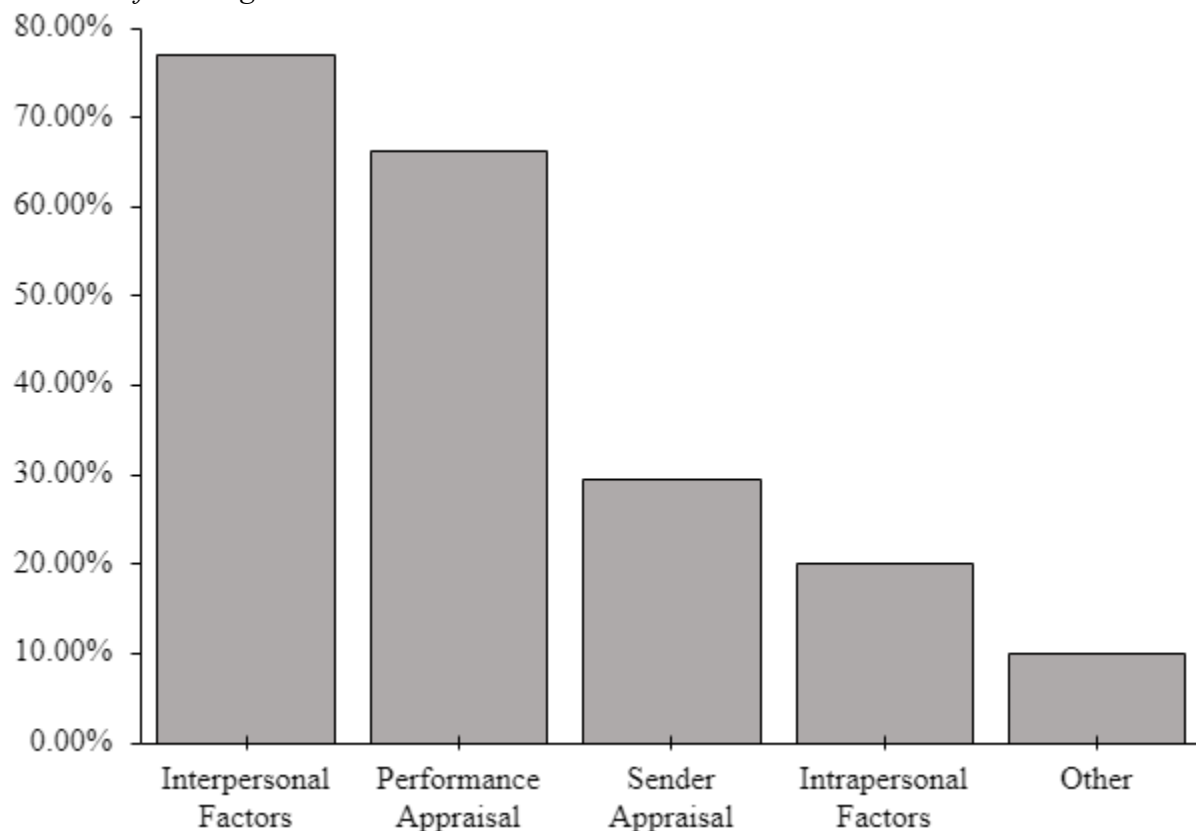


*Note.* N = 157.

The most mentioned factor (46%, *n* = 64) indicated by the students to actually process

feedback was whether it is delivered in a constructive manner, including explanations of

mistakes and advice for improvement. Being clear and specific in the feedback was also often

mentioned in relation to constructive feedback. Some students (13%, $n = 18$) mentioned explicitly that being praised for performance was important for them to take up the feedback, others (10%, $n = 14$) reported that they want to hear critique to know what they need to improve on. Almost a third of the students (31.7%, $n = 44$) noted that it is especially the way the feedback is delivered that influences them the most, in terms of empathy, comprehensiveness, and friendliness by the teacher. The factor 'clearness of the task and the expectation of the teacher' concerns transparency of the skill being developed. It slightly overlapped with the description of constructive feedback as it involved an explanation of task performance; however, this theme more specifically addressed the understanding of the task by the student and the interpretation of the teacher through the feedback and less the assistance for improvement. All these themes together can be grouped under the category of performance appraisal as they all concern the evaluation of achievement by describing feedback content, form, and function (Raemdonck & Strijbos, 2013). Students clearly appreciated constructive feedback that informs them about the aspects they did well and not so well, in addition to suggestions on how one can improve. Statements like *"tuning in to me and putting themselves in my place."* (respondent 72) and *"concrete description of mistakes and helpful suggestions for improvement."* (respondents 54, 92, 131) underpin this by pointing out the importance of feeling understood and supported.

The third most reported theme affecting the intention to process was the relation to the teacher. About every third student (29.5%, $n = 41$) stated that how they get along with the teacher influenced their intention to process the feedback, where it is generally important that they are able to trust the teacher to be sincere and considerate, as well as to experience the interaction as harmonious. This can be understood from statements such as *"The relation to the teacher and feeling safe to express my opinion."* (respondent 74) or *"The teacher and how much I trust*

*his/her judgment."* (respondent 98). One student also explained that *"The relationship with the teacher strongly influences my motivation for a subject and I perform better."* (respondent 76), indicating the influence that interpersonal factors have on the willingness to process feedback. Five percent (*n* = 7) specifically mentioned that they prefer a friendly, just, and encouraging teacher if they were to adopt the feedback, and eight students (5.8%) explicitly mentioned the importance of trust—either towards the teacher or with regard to the feedback environment. These three factors relate to sender appraisal and apply to 29.5% (*n* = 41) of the students. Figure 4 illustrates the categories grouped into the variables investigated in this study.

**Figure 4**
*Factors Influencing the Intention to Process Feedback.*



*Note.* N = 157.

Inspection of occurring themes brings attention to the influence of intrapersonal factors on the intention to process feedback. The data indicate that 13% (*n* = 18) deem being motivated

in general to enhance their intention to process the feedback, while 14 students specifically

report their interest in the specific course/topic determines whether they are willing to process

the feedback they receive. Statements mentioning the relevance of personal goal-setting and the

individual progress (2.9%, *n* = 4) further amplify how intrapersonal factors play a role in

feedback processing; only one student mentioned the impact of "*current mood*" (respondent 20).

**Quantitative Analysis**

**Data Inspection and Preliminary Analysis**

The assumptions of normality, linearity, and homoscedasticity have been checked for data

analysis. The standardized skewness and kurtosis were within the -3 to +3 range (-0.68 and

-1.89, respectively; Tabachnick & Fidell, 2001). No outliers have been detected through analysis

of standard residuals (*Std. Residual Min* = -2.56, *Std. Residual Max* = 2.47). A correlation

between the variables perceived adequacy and emotional response is medium, *r(120) = .50, p <*

.01, and therefore, multicollinearity is not an issue. This is additionally confirmed by the

collinearity statistics (*perceived adequacy, Tolerance = .71, VIF = 1.43; emotional response,*

*Tolerance = .72, VIF = 1.40*).

On average, the students were moderately willing to improve based on the feedback (*M*

= 5.67, *SD* = 2.73). Notably, the students were more likely to intend to process the feedback in

the conditions with high performance appraisal, and out of those two conditions, positive sender

appraisal appeared to increase willingness more. Table 1 shows the descriptives per variable by

condition. The data suggest that the students reported moderate perceived adequacy (*M* = 5.05,

*SD* = 2.17). The positive sender appraisal conditions had, on average, higher scores than negative

appraisal conditions, where both positive sender and high performance appraisal show the

highest, yet moderate, scores of perceived adequacy. One question of the FPQ investigated the

student's emotional response to the feedback, which was measured as either positive or negative, coded as 1 and 0, respectively. The data suggests that students were more likely to be negatively affected by the feedback ($M = 0.29$, $SD = 0.46$). Similarly to perceived adequacy and intention to process, a positive emotional response was most reported in the condition with high performance appraisal by a positively appraised sender.

Both the perceived adequacy of feedback and the emotional response to the feedback positively relate to the intention to process feedback, with $r(120) = .49$, $p < .01$ and $r(120) = .31$, $p < .01$ respectively. While the effect size of the correlation with perceived adequacy is medium and, thereby, predicts practical significance of the interaction between how the feedback is perceived and whether it is processed, the emotional response has a rather small effect size. Furthermore, although having a small effect size, the writing self-concept correlated significantly with the intention to process the feedback, $r(120) = .29$, $p < .01$, and with the perceived adequacy, $r(120) = .20$, $p < .05$. The scale composing the emotional self-concept showed no significant correlation with perceived adequacy, emotional response, or intention to process the feedback and was therefore excluded from the regression analysis.

**Table 1**

*Descriptive Statistics per Moderating Variable*

| | High performance appraisal | | Low performance appraisal | |
|---|---|---|---|---|
| | M (SD) | Range | M (SD) | Range |
| Positive sender appraisal | | | | |
| Intention to process | 6.50 (2.31) | 2.23-10.00 | 5.60 (2.60) | 0.50-10.00 |
| Perceived adequacy | 6.14 (1.95) | 1.86-8.89 | 5.09 (1.98) | 1.28-8.33 |
| Emotional response | 0.50 (0.51) | 0.00-1.00 | 0.19 (0.40) | 0.00-1.00 |
| Writing self-concept | 5.97 (1.89) | 2.82-10.00 | 6.56 (2.30) | 1.80-9.86 |
| Emotional self-concept | 3.49 (2.84) | 0.18-10.00 | 4.27 (1.99) | 1.58-8.78 |
| Negative sender appraisal | | | | |
| Intention to process | 6.37 (2.51) | 0.57-10.00 | 4.60 (3.00) | 0.00-10.00 |
| Perceived adequacy | 4.97 (2.32) | 0.62-8.96 | 4.28 (2.12) | 0.78-8.67 |
| Emotional response | 0.29 (0.46) | 0.00-1.00 | 0.19 (0.40) | 0.00-1.00 |
| Writing self-concept | 6.86 (1.22) | 4.60-9.58 | 6.19 (1.81) | 2.30-10.00 |
| Emotional self-concept | 3.49 (2.25) | 0.00-6.95 | 3.75 (2.16) | 0.23-9.03 |

*Note.* N = 122. Standard deviations are presented in parentheses. Range indicates minimum to maximum value.

**The Effect of Feedback Perceptions and Emotional Response**

Writing self-concept is added in model 1 to control for covariance (see Table 2). Students' self-concept regarding their writing skills significantly predicts the intention to process the feedback, $b = .43$, $t(120) = 3.34$, $p < .01$, explaining 8.5% of the variance in intention to process the feedback $R^2 = .09$, $F(1, 120) = 11.16$, $p < .01$, $f^2 = .09$.

To estimate the proportions predicting the intention to process feedback by the perception of the feedback and the emotional response to the feedback, they are added in model 2. These

variables accounted for a significant amount of variance in the intention to process the feedback, $R^2 = .28$, $F(3, 118) = 15.419$, $p < .01$, $f^2 = .39$. Perceived adequacy of the feedback significantly influences students' intention to process the feedback, $b = .52$, $t(118) = 4.48$, $p < .01$. However, students' emotional response following the fictional feedback Toni received—whom they impersonated—did not significantly predict intention to process the feedback.

**The Moderation Effect of Sender Appraisal and the Sender's Performance Appraisal**

For the moderation analysis variables have been centered and interaction terms added to Model 3 (Table 2). The model including the interaction terms accounted for a significant proportion of the variance in intention to process the feedback, $\Delta R^2 = .33$, $\Delta F = 2.97$, $p < .05$, $f^2 = .61$. Examination of the interaction revealed performance appraisal to moderate the relationship between perceived appraisal and intention to process the feedback, $\Delta R^2 = .03$, $\Delta F = 5.04$, $p < .05$, $f^2 = .50$. Also, the interaction between emotional response and performance appraisal explained a significant amount of variance in the intention to process feedback, $\Delta R^2 = .05$, $\Delta F = 7.36$, $p < .01$, $f^2 = .32$. Interactions with sender appraisal were not significant.

**Table 2**

*Hierarchical Regression Analysis Predicting Intention to process the Feedback*

| Variable | B | 95% CI for B | | $SE_B$ | $t$ | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| | | LL | UL | | | | |
| **Model 1** | | | | | | .09 | .09** |
| (Constant) | 2.95 | 1.27 | 4.63 | 0.85 | 3.47** | | |
| Writing self-concept | 0.43 | 0.17 | 0.68 | 0.13 | 3.34** | | |
| **Model 2** | | | | | | .28 | .20** |
| (Constant) | 1.05 | -0.65 | 2.75 | 0.86 | 1.22 | | |
| Writing self-concept | 0.29 | 0.06 | 0.53 | 0.12 | 2.53* | | |
| Perceived adequacy | 0.52 | 0.29 | 0.76 | 0.12 | 4.48** | | |
| Emotional response | 0.36 | -0.74 | 1.47 | 0.56 | 0.65 | | |
| **Model 3** | | | | | | .38 | .10* |
| (Constant) | 0.34 | -1.48 | 2.16 | 0.92 | 0.37 | | |
| Writing self-concept | 0.31 | 0.08 | 0.53 | 0.11 | 2.70* | | |
| Perceived adequacy | 0.53 | 0.20 | 0.85 | 1.16 | 3.22** | | |
| Emotional response | 1.09 | -0.77 | 2.95 | 0.94 | 1.17 | | |
| Sender appraisal | 0.08 | -0.91 | 1.06 | 0.50 | 0.15 | | |
| Performance appraisal | 2.72 | 0.53 | 4.91 | 1.11 | 2.46* | | |
| Interaction 1 | 0.82 | -0.04 | 1.68 | 0.43 | 0.60 | | |
| Interaction 2 | -4.91 | -11.32 | 1.51 | 3.24 | -1.52 | | |
| Interaction 3 | -0.25 | -0.70 | 0.20 | 0.23 | -1.11 | | |
| Interaction 4 | -2.14 | -4.31 | 0.03 | 1.09 | -1.96 | | |
| **Model 4** | | | | | | .31 | .03** |
| (Constant) | -0.06 | -1.57 | 1.45 | 0.89 | -0.07 | | |
| Writing self-concept | 0.27 | 0.06 | 0.48 | 0.11 | 2.37* | | |
| Perceived adequacy | 0.73 | 0.52 | 0.95 | 0.14 | 5.37** | | |
| Performance appraisal | 3.13 | 0.83 | 5.43 | 1.08 | 2.89** | | |
| Interaction 3 | -0.44 | -0.83 | -0.05 | 0.20 | -2.25* | | |
| **Model 5** | | | | | | .22 | .05** |
| (Constant) | 2.19 | 0.59 | 3.79 | 0.81 | 2.71** | | |
| Writing self-concept | 0.37 | 0.13 | 0.60 | 0.12 | 3.07** | | |
| Emotional response | 2.91 | 1.43 | 4.39 | 0.75 | 3.88** | | |
| Performance appraisal | 1.82 | 0.77 | 2.87 | 0.53 | 3.43** | | |
| Interaction 4 | -2.73 | -4.72 | -0.74 | 1.00 | -2.71** | | |

*Note.* $N = 122$. CI = confidence interval; LL = lower limit; UL = upper limit; interaction 1 = sender appraisal and perceived adequacy; interaction 2 = sender appraisal and emotional response; interaction 3 = performance appraisal and perceived adequacy; interaction 4 = performance appraisal and emotional response. * Indicates p < .05; ** *p* < .01

This analysis results that the degree of performance appraisal by the sender (low vs. high) affects how students perceive the feedback and subsequently intend to process the feedback. This effect is especially high for low performance appraisal $b = -.44$, $t(117) = -2.25$, $p < .05$. (see Figure 5). Furthermore, it is important to note that although emotional response alone is not statistically significant $b = .36$, $t(118) = .65$, $p > .5$, it does appear to become significant in the interaction with performance appraisal, $b = -2.73$, $t(117) = -2.71$, $p < .01$ (see Figure 6).
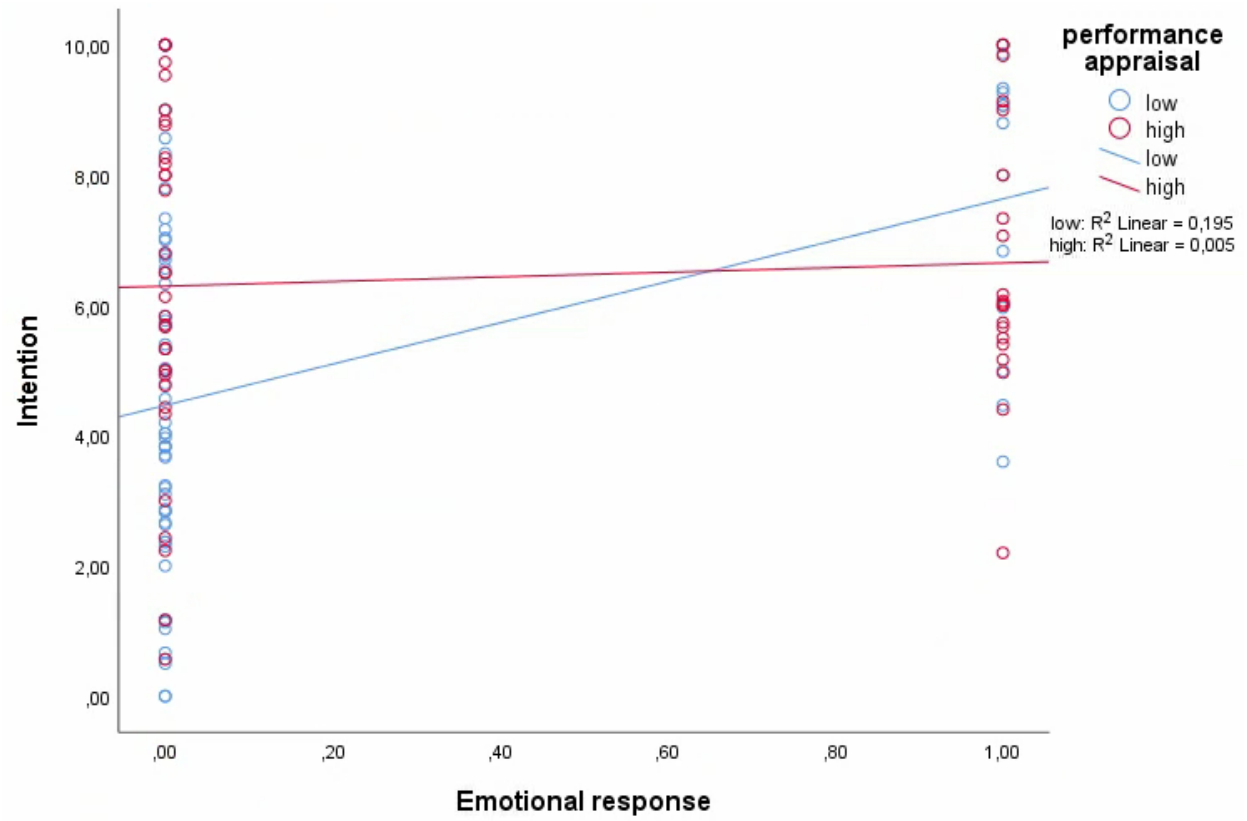
**Figure 5**
*The Effect of Performance Appraisal and Perceived Adequacy on Intention to Process Feedback*
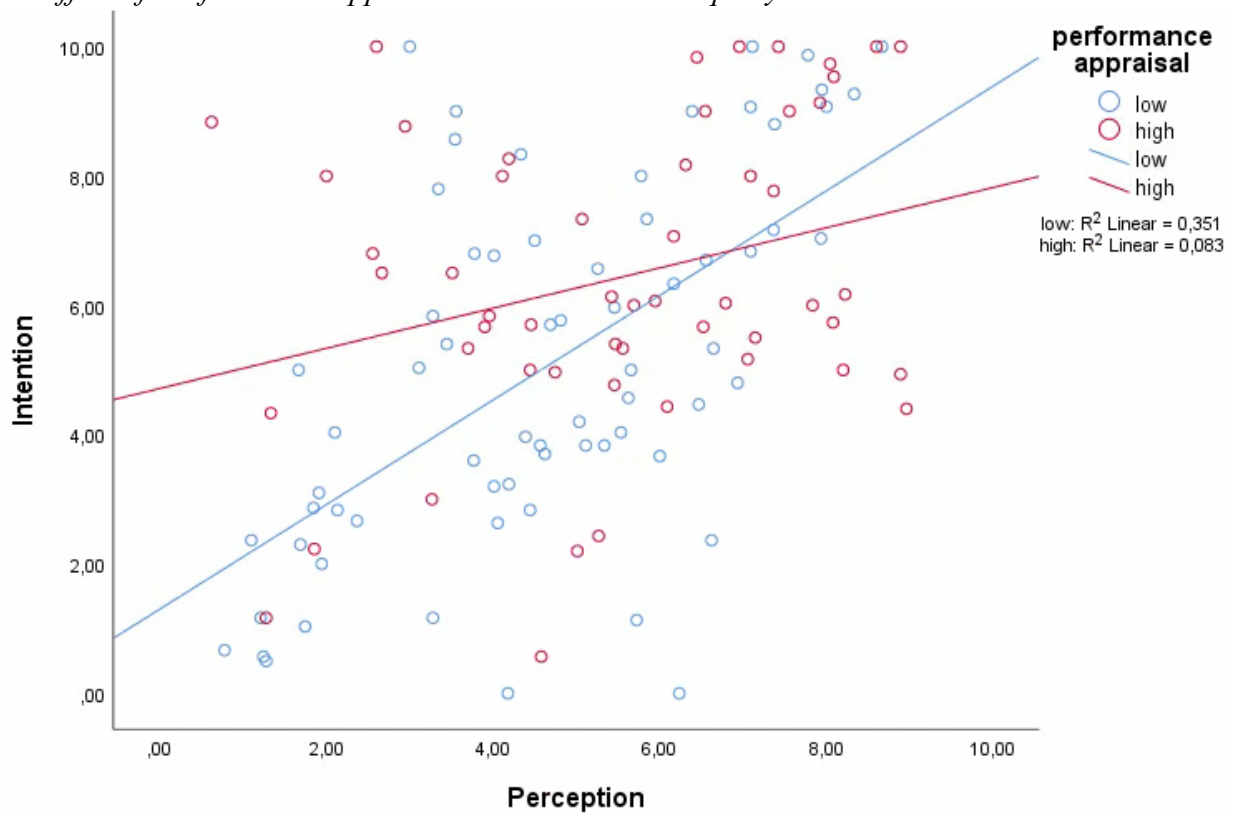


*Note.* N = 122.

**Figure 6**

*The Effect of Performance Appraisal and Perceived Adequacy on Intention to Process Feedback*



*Note.* N = 122.

**Discussion**

The objective of this study was twofold. For one, it explored to which extent the feedback receiver's perceptions and emotional response to feedback can predict the intention to process feedback. Furthermore, it investigated how the sender's appraisal of the task performance and the sender appraisal (i.e., the relationship between sender and receiver) influence the effect that perceived adequacy of the feedback and the emotional response have on the intention to process feedback. For this purpose, secondary school students were assigned to one of four different fictional scenarios in which a student's essay was evaluated, and the teacher either communicated their appraisal of the student's performance elaborately and with specificity or rather concise with general remarks. The participants were instructed to react to the feedback in the scenario as if they were in the role of the fictional character and indicate their perceived adequacy, emotional response, and their willingness to improve based on this feedback. Given that this study evaluated the reactions of students to a fictional scenario, the feedback was neither directed at the student's own work nor were they expected to improve their performance after the feedback was received. To control for the academic self-concept on the intention to process feedback, this variable was measured before exposure to the scenario and controlled for in the analysis. In line with previous research in this field (e.g., Baadte & Schnotz, 2014), the data suggest that academic self-concept does affect how feedback is perceived and a high self-concept predicts the likelihood of processing feedback, possibly by enhancing the student's effort.

**The Effect of Feedback Perceptions and Emotional Response on the Intention to Process Feedback**

*Feedback perception*

Measures of perceived fairness, usefulness, and acceptance were used to identify students' perceived adequacy when viewing themselves as feedback receiver in the experimental conditions. The correlation with willingness to improve has a medium effect size and predicts that it is likely for people to process feedback with the intention to improve when they think it appropriately points out errors or reflects the discrepancy between current and optimal performance. Concerning findings of self-concept research (Bong & Skaalvik, 2003; Marsh et al., 2017), this correlation might also display that students that are generally keen on improving their performance through feedback are more likely to perceive feedback as useful and acceptable. The first hypothesis *"perceiving feedback as more useful will increase the intention to process the feedback"* was confirmed by results showing that perceived adequacy predicts the intention to process feedback. This is the case even after controlling for self-concept, meaning that the likelihood of being willing to improve because of high perceived adequacy can be expected despite having high or low self-perceptions about the ability to perform the task.

*Emotional Response*

Although a positive correlation between emotional response and intention to process the feedback indicates that when a more positive emotional response such as content, satisfaction, or success is assumed upon receiving the feedback increases the likelihood of being willing to improve, this effect is only small. This small effect size of the correlation might point to a

tendency that a more positive affect is experienced by students that are generally more willing to improve through the feedback.

The emotional response measure in this study does not significantly account for the intention to process the feedback, meaning that the second hypothesis was not confirmed. This could indicate that the emotional reaction to feedback has little effect on whether one likes to process the feedback. As found by Baadte and Schnotz (2014), feedback might decrease performance and mood, but the effort to improve may still be evident. This implies that even when the feedback elicits a negative emotional response, students might yet be willing to improve their performance.

**The Effect of Sender Appraisal and Sender's Performance Appraisal**

Whether or not the feedback receiver is willing to process the feedback has also been shown to be influenced by the sender's characteristics (Aben et al., 2019). This study aims to contribute to research in this context by investigating: (1) the performance appraisal by the sender regarding the amount of explanation and specificity of the feedback, and (2) the valuation of the sender by the receiver. More precisely, how these factors influence the receiver's intention to process the feedback in the context of a fictional scenario. It was thus evaluated how each of these two characteristics affects the strengths or direction of feedback perception and emotional response on the intention to process the feedback.

*Performance Appraisal*

Based on previous findings that the content of the feedback influences the interpretation and reaction to the feedback (Misiejuk et al., 2021; Mulder & Ellinger, 2012) and that specifically elaborated and specific feedback contributes to the effectiveness of feedback (Raemdonck & Strijbos, 2013), it was hypothesized that high feedback appraisal increases the

effect of perceived adequacy (H3) and emotional response (H4) on intention to process the feedback. It appears that the amount and specificity of the feedback in the fictional scenario does affect the extent to which students' perceived adequacy influenced the intention to process the feedback. The large effect size adds to the statistical significance that this is an effect likely to be practically visible to the observer (Cohen, 1992). Interestingly, the results suggest that students who did not perceive the feedback as adequate were more likely to process the feedback if they received elaborate and specific feedback, while students perceived the feedback as more adequate and were also more likely to process the feedback if it was rather general and concise. This finding is somewhat surprising given the body of research suggesting elaborative and specific feedback to be more effective (e.g., Narciss, 2013). However, it could be argued that this study did not focus on the effectiveness of the feedback which could be defined as an improvement on a subsequent task, but rather aimed to identify what brings the student towards intentionally processing the feedback to adopt it in future task execution. While elaborate and specific feedback might be deemed as more effective for successive performance improvement, it might undermine the student's willingness to improve; this could be because of the increased amount of information that might appear overwhelming. If the feedback consists of just a few notes, it might appear as though fewer errors were made, indicating that less effort needs to be invested in the task improvement. Similarly, low performance appraisal appeared to be less likely to enhance the intention to process the feedback for those who indicated a negative emotion but was more likely to promote the intention to process if the emotional response was positive (as compared to high performance appraisal). This is in line with findings by Strijbos et al. (2010) who conclude that elaborated feedback may impede learning by making the students

more passive and dependent and that fewer comments lead to the assumption that fewer mistakes were made which enhances a positive emotional response.

Thus, it is possible that students were more likely to indicate higher perceived feedback adequacy in response to low performance appraisal but might prefer high performance appraisal for their own work. This assumption is strengthened by the self-proclaimed factors that influence the intention to process the feedback which students had indicated in the open question. On average, students reported valuing constructive feedback the most, which entails suggestions for improvement, explanations of the mistakes, and clearness of which aspects of the tasks are evaluated or important; reflecting what this study related to elaborate and specific feedback. Moreover, the qualitative analysis revealed that performance appraisal appears to play a major role in the students' intention to process the feedback, ranging from the message itself to how it is communicated. Thereby, it contributes to answering the extent performance appraisal has on the intention to process feedback.

### *Sender Appraisal*

To identify the extent to which valuation of the sender in terms of liking by the receiver influences the receiver's intention to process the feedback, the scenarios were manipulated in a way that the feedback came either from a liked teacher with a good reputation or a disliked teacher that is known to be difficult to please. The manipulations were intended to elicit a sense of trust and comfort or aversion and defiance in the participant, respectively. Accordingly, studies suggested feedback receivers are more likely to be willing to improve when they liked, respected, and trusted the sender (Montalvo et al., 2007; O'Reilly & Anderson, 1979; Skipper & Douglas, 2015). Furthermore, a trusted environment and well-intentioned feedback have been demonstrated to elicit openness to receive feedback due to the resulting sense of safety and that

one will not be harmed through negative feedback (Carless, 2013). Despite the extensive research on the impact of personal attraction on the efficiency of feedback (Carless, 2013; Giffin, 1967; Montalvo et al, 2007; Strijbos et al., 2010), this study did not detect a significant moderating effect on how the sender is appraised on perception (H5) and emotional response (H6). This lack of evidence might suggest that the secondary school students simply did not emerge in the fictional scenario enough to consider the influence of the relationship depicted. Possibly, the rather concise mentioning of liking or disliking the feedback sender in the fictional scenario was not effective enough to signal the level of trust and comfort to the participant that might arise when being in the real-world setting.

The valuation of the feedback sender appears to be influencing nonetheless. A third of students identify their appraisal of the sender to influence their willingness to process given feedback. Most notably was the mentioning of the relationship between oneself and the feedback-giving teacher. Those students are more likely to process the feedback if they have the perception that they can trust the teacher to mean well with them and to elicit a sense of support.

**Implications**

The findings of the present study suggest that there is a diversity of influences on students' intention to process feedback on a task received by a teacher. The results imply that generally, students want the feedback to entail constructive information that can help them improve on future performance. To increase students' willingness to process the feedback, it is thus essential to consider how to deliver the feedback in terms of explanation, dialogue, or understandable notes. Such feedback is seemingly perceived as more adequate (i.e., fair, useful, and acceptable), although only to a limited extent. While this finding conforms with Misiejuk et al. (2021) who found that perceiving feedback as usefully increased error tolerance and

willingness to improve, this study also insinuates that elaborate and specific feedback only increases the perceived adequacy and subsequent intention to process the feedback to a certain degree. Similar to Strijbos et al. (2010), these findings indicate that there is a benefit in general and concise feedback, as low performance appraisal predicts higher intention to process the feedback as compared to high performance appraisal, if perceived adequacy is also high. Conclusively, teachers should give feedback that is concise and yet offers enough explanation on task performance. Most important is that the feedback is experienced as constructive by the students, which requires tips on how to improve, praise for the aspects that have been performed adequately, and allow for queries.

**Limitations and Future Directions**

Despite the benefits of vignette studies to increase external validity and its high congruence with actually experienced instances (Robinson & Clore, 2001), this experimental method might be flawed. Students were presented with an essay assignment by a fictional student whose perspective they were asked to take on when evaluating the received feedback from the fictional teacher. A number of factors might have influenced the ability of the participant to do so. Given that the participant had no ownership of the produced essay they might not have been very affected by the feedback as neither praise nor criticism related to their own performance. Furthermore, the sender appraisal variable might not have been manipulated sufficiently in order to enhance an effect. Specifically, only one sentence informed the participant whether the feedback came from a liked or disliked teacher. In retrospect, it might have been more effective to underline the relationship between the fictional teacher and student through more specific information on the empathy towards the student and the trust experienced in this relationship. While the vignette method allowed for manipulation of performance and

sender appraisal and thereby reduced the likelihood of other interpersonal variables masking the influence on feedback processing, no manipulation check was applied to test whether the students perceived the manipulation of the variables as intended. Although the exclusion of participants who fail the manipulation check is inadvisable due to an increase of a type I error (Kozian et al., 2020), such a check may provide valuable insights to ensure that participants comprehend, perceive, and/or react as expected to the manipulation. In future vignette studies, a manipulation check might be thus warranted to support the claim that the fictional scenario closely resembles a real situation.

The lack of a significant contribution of emotional response might relate to an imprecision in the measurement. This study only evaluated the difference between positive and negative affect, rather than letting students evaluate to what extent they experienced the six emotions of the FPQ (offended, satisfied, angry, confident, frustrated, and successful). In a study by Strijbos et al. (2021), although concerning peer rather than teacher feedback, such measurement of emotional response resulted in a significant prediction of willingness to improve.

Moreover, while the difference in means suggests a higher intention to process the feedback and perceived adequacy when the sender is positively appraised, this variable does not significantly contribute to predicting the intention to process overall. This finding is rather surprising given the results of studies on sender influence on feedback perception (Carless, 2013; Montalvo et al., 2007). Future research is proposed to investigate this factor in more detail.

Adopting a mixed-methods approach benefitted the study in that it increased the understanding of the factors that influence students' feedback processing. By including

qualitative analysis of self-reported factors and quantitative analysis of perceived adequacy and emotional response, a broader and neutral perspective was obtained that on the one side validated the relevance of the investigated variables in this study, and on the other, it indicated the variety of influences students experience on the decision to process feedback. As performance appraisal in both analyses provided high effect sizes, these implications provide practical significance and support research on the relevance of the mode of feedback delivery. Future research is advised to adopt a similar methodology to increase the scope of practical significance (see Onwuegbuzie & Leech, 2018).

**Conclusion**

This mixed-methods study on students' intention to process feedback presented interesting findings to support and encourage research into feedback. Overall, it appears that interpersonal factors, such as the appraisal of the teacher, including their empathy, the credited expertise, and the general getting along with the teacher affect the intention to process the received feedback in students' opinion. In agreement with prior research, feedback is most valued if it is task-specific and provides indications on how to proceed. The feedback that students identify as useful, acceptable, and fair is more likely to be processed, even more so with concise remarks.

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## Appendix A1: Information About the Study

**1. English Version**

*"INFORMATION ABOUT THE RESEARCH "FEEDBACK PERCEPTION AND THE ROLE OF THE FEEDBACK SENDER".*

➢ **Why am I receiving this information?**

During the study, so-called "feedback" plays an important role. These are comments that a teacher gives on a student's work, such as a written text. The teacher says, for example, what has been done well and what could be improved. There are signs that the relationship between teacher and student influences the effect of feedback, but we do not yet know exactly how this works.

In order to find out more about how students process feedback from teachers and whether the relationship between teacher and student plays a role, we invite you to participate in this study. We are addressing you because you are a student at IGS Göttingen and aged 16-19.

➢ **What does it mean for me to participate in this study?**

By means of a questionnaire, we examine how students from different faculties process feedback from a teacher. indicate how they would experience the feedback. Completing the questionnaire takes about 15 minutes.

➢ **Do I have to participate in this study?**

Participation in the survey is completely voluntary, thus we will ask you to indicate that you would like to participate in the study. So if you decide during the course of the study that you do not want to continue, you can stop at any time.

You have this right at any time, even after you have agreed to participate in the survey. In this case, please contact the project leader (Charlotte Sievers). Your data will then be removed from

the database. This is possible until the evaluation of the data (from 30 March 2022). Of course,

we hope that you will participate.

> ➢ **What happens to my data?**

All answers given while filling in the questionnaire will be treated confidentially. This means

that the questionnaires and answers are kept secure and that only the researchers can see the

completed Questionnaires.

The Qualtrics program automatically collects the IP address of the person completing the

questionnaire, but this information will be deleted immediately at the start of data processing.

This means that the research results can never be traced back to you.

 If you have any questions about data protection, you are also welcome to contact the researchers

or the data protection officers of the University of Groningen (via privacy@rug.nl).

> ➢ **In need of more information?**

If you would like to know more about the study, please send an e-mail to

c.sievers@student.rug.nl.

With kind regards, on behalf of the research team,

Charlotte Sievers

Student Rijksuniversiteit Groningen

c.sievers@student.rug.nl


Prof. dr. Jan-Willem Strijbos

Rijksuniversiteit Groningen

j.w.strijbos@rug.nl

2. **German Version**

*"INFORMATIONEN ÜBER DIE FORSCHUNG "FEEDBACK-WAHRNEHMUNG UND*

*DIE ROLLE DES FEEDBACK-GEBERS"*

➢ **Warum erhalte ich diese Informationen?**

In dieser Studie spielt das so genannte "Feedback" eine wichtige Rolle. Dabei handelt es sich um

Kommentare, die eine Lehrkraft zu einer schulischen Arbeit, z. B. zu einem schriftlichen Text,

abgibt. Die Lehrkraft sagt zum Beispiel, was gut gemacht wurde und was verbessert werden

könnte. Es gibt Anzeichen dafür, dass die Beziehung zwischen Lehrkraft und Schüler:in die

Wirkung von Feedback beeinflusst, aber wir wissen noch nicht genau, wie das funktioniert.

Um mehr darüber herauszufinden, wie Schüler:innen Feedback von Lehrkräften verarbeiten und

ob die Beziehung zwischen Lehrkraft und Schüler:in eine Rolle spielt, laden wir dich ein, an

dieser Studie teilzunehmen. Wir wenden uns an dich, da du Schüler:in an der IGS Göttingen und

im Alter von 16-19 Jahren bist.

➢ **Was bedeutet es für mich, an der Studie teilzunehmen?**

Mit Hilfe dieser Umfrage untersuchen wir, wie Schüler:innen das Feedback einer Lehrkraft

verarbeiten. Wir verwenden fiktive Situation Skizzen und bitten dich, dich in diese Situation

hineinzuversetzen und anzugeben, wie du das Feedback erleben würdest. Das Ausfüllen der

Umfrage dauert etwa 15 Minuten.

➢ **Muss ich an dieser Umfrage teilnehmen?**

Die Teilnahme an der Umfrage ist freiwillig, daher bitten wir dich vor Beginn der Studie um eine

Einverständniserklärung. Solltest du dich also im laufe der Studie dazu entschließen, nicht mehr

weitermachen zu wollen, kannst du jederzeit aufhören.

Dieses Recht steht dir jederzeit zu, auch nachdem du der Teilnahme an der Umfrage zugestimmt hast. In dem Falle wende dich bitte an die Projektleiterin (Charlotte Sievers). Deine Daten werden dann aus den Datenbeständen entfernt. Dies ist bis zur Auswertung der Daten möglich (diese startet ab 30. März 2022). Wir hoffen natürlich, dass du teilnehmen wirst.

➢ **Was passiert mit meinen Daten?**

Alle Antworten, die du während des Ausfüllens der Umfrage gibst, werden vertraulich behandelt. Das bedeutet, dass die Umfragen und Antworten sicher aufbewahrt werden und dass nur die Forscher:innen die ausgefüllten Umfragen sehen können.

Das Programm Qualtrics sammelt automatisch die IP-Adresse der Person, die den Fragebogen ausfüllt, aber diese Information wird sofort zu Beginn der Datenverarbeitung gelöscht. Die Forschungsergebnisse können also nicht zu dir zurückverfolgt werden.

Wenn du Fragen zum Datenschutz hast, kannst du dich auch gerne an die Forscher:innen bzw. an die Datenschutzbeauftragten der Universität Groningen (über privacy@rug.nl).

➢ **Benötigst du weitere Informationen?**

Wenn du mehr über die Studie wissen möchtest, wende dich bitte sende eine E-mail an c.sievers@student.rug.nl.

Mit freundlichen Grüßen, im Namen des Forschungsteams,

Charlotte Sievers

Student Rijksuniversiteit Groningen

c.sievers@student.rug.nl

Prof. dr. Jan-Willem Strijbos

Rijksuniversiteit Groningen

j.w.strijbos@rug.nl

**Appendix A2: Consent Form**

1. **English Version**

*"FEEDBACK PERCEPTION AND THE ROLE OF THE FEEDBACK GIVER".*

By agreeing to participate in this study, you understand the following:

1. I have carefully read the information letter and the explanations of the questionnaire. I understand what participation in the study entails.

2. I understand that participation in the questionnaire is voluntary.

3. I have decided to participate.

4. I can stop participating at any time.

5. If I decide to stop participating, I do not have to give a reason.

6. I have the right to obtain a copy of this consent form by taking a screenshot of this page or asking the researcher for a copy (send an email to c.sievers@student.rug.nl).

I, …………………………… …………………………………,

student at the IGS Göttingen,

consent to the participation in the questionnaire on the processing of feedback by a teacher.
□ Yes, I **consent** to participate in the study; this permission runs until <u>December 2022</u>.
□ No, I do **not consent** to participate in this study.

Signature                                Place                                Date

_____            _____            _____

**2. German Version**

*"FEEDBACK-WAHRNEHMUNG UND DIE ROLLE DES FEEDBACK-GEBERS".*

Wenn du an der Teilnahme an dieser Studie zustimmst, verstehst du Folgendes:

1. Ich habe das Informationsschreiben und die Erläuterungen zum Fragebogen aufmerksam gelesen. Ich verstehe, was die Teilnahme an der Studie bedeutet.

2. Mir ist klar, dass die Teilnahme an dem Fragebogen freiwillig ist.

3. Ich habe mich für die Teilnahme entschieden.

4. Ich kann die Teilnahme jederzeit beenden.

5. Wenn ich mich entscheide, die Teilnahme zu beenden, muss ich keinen Grund angeben.

6. Ich habe das Ich habe das Recht, eine Kopie dieser Einverständniserklärung zu erhalten, indem ich einen Screenshot dieser Seite mache oder die Forscherin um eine Kopie bitte (sende eine E-Mail an c.sievers@student.rug.nl).

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Ich, ……………………………… …………………………………,

Schüler:in an der IGS Göttingen

stimme der Teilnahme an der Studie über 'Feedback-Wahrnehmung und die Rolle des Feedback-Gebers' zu.

□ Ja, ich bin mit der Teilnahme an der Studie einverstanden; diese Erlaubnis gilt bis
<u>Dezember 2022</u>.

□ Nein, ich willige der Teilnahme an dieser Studie **nicht** ein.

Unterschrift                 Ort                 Datum

_____     _____     _____

## Appendix B: The Questionnaire

**1. English Version**

*Demographics*

1. What is your current age

2. What is your gender?

    a. Male

    b. Female

    c. Other

    d. Prefer not to answer

3. What grade level are you currently in?

    a. Year 11

    b. Year 12

    c. Year 13

*Self-concept*

1. Academic self-concept

    a. Compared to others my age I am good at writing.

    b. I get good marks for writing performances.

    c. The writing of texts is easy for me.

    d. I learn things quickly regarding writing skills.

    e. I have always done well in writing.

2. Emotional self-concept

    a. A lot of things make me nervous.

    b. When older people say something to me, I get very nervous.

  c. I get nervous when the teacher asks me a question.

  d. I am nervous.

### *Self-Proclaimed Influences on the Intention to Process the Feedback*

1. What aspects are important for you to process the feedback that your teacher gives you about a work assignment you have completed? (e.g., the subject, the relationship with the teacher, your motivation, etc.) Please explain your choice in a few sentences.

### *Scenario*

As part of an English class, Toni was asked to write an argumentative essay on a given statement.

  The teacher provided the following instructions:

    Argue for or against the statement below by writing an argumentative essay:

1) State your position.

2) Provide points that support your position.

3) Support each point with specific reasons/examples.

4) Provide counterarguments.

5) Support each point with specific reasons/examples.

Statement: As digital learning increases, public libraries become redundant.

Toni wrote the following essay:

"As online learning becomes more common, some people have suggested that public libraries should be shut down and, in their place, everyone should be given an e-reader. Proponents claim that e-readers will encourage more people to read because, through them, books are more accessible by being only a click away.

  However, it would be a serious mistake to replace libraries with e-readers. First, digital books and resources are associated with less learning and more problems than print resources.

Apparently, people read slower, retain less information, and understand less of what they read on tablets compared to print. Staring too long at a screen has also been shown to cause numerous health problems. I know that whenever I read from my e-reader for too long, my eyes get tired and my neck hurts.

Second, libraries offer more services than book lending, such as playtimes for toddlers, job fairs for teenagers, and meeting spaces for senior citizens. Replacing libraries with tablets would encourage people to spend even more time looking at digital screens, despite the numerous issues surrounding them. It would also end access to many of the benefits of libraries that people have come to rely on."

*Feedback*

**Positive Sender Appraisal and High Performance Appraisal.** The teacher, whom Toni likes a lot because s/he appears to be very supportive and kind to all students, gave the following feedback:

"You begin by explaining the topic and state both sides of the argument, which is well done. Although you present your thesis rather late, once you do it you justify your claims for the remainder of your essay. In the end, you include a counter argument which you then refute, implying that your argument is stronger. However, you have to keep in mind that your own experiences are neither facts nor scientific data and therefore must not be part of your argumentative essay. Additionally, not all claims you make are correct and you are lacking sources to back up your arguments. For example, providing multiple users with the same version of an e-book will eventually lead to higher costs than offering one copy of a printed book, and how can you support the claim about health issues? If

you have any questions regarding the essay, talk to me after class and we can discuss it further."

**Positive Sender Appraisal and Low Performance Appraisal.** The teacher, whom Toni likes a lot because s/he appears to be very supportive and kind to all students, gave the following feedback:

- Don't mention your own experience

- Inaccurate claims - ebooks not cheaper

- More detail?!

- The thesis is okay supported but misses resources

- Includes counterargument

**Negative Sender Appraisal and High Performance Appraisal.** The teacher, whom Toni rather dislikes because s/he appears to be very strict and mean and you feel s/he is always trying to pick on you personally, will give subsequent feedback:

"You begin by explaining the topic and state both sides of the argument, which is well done. Although you present your thesis rather late, once you do it you justify your claims for the remainder of your essay. In the end, you include a counter argument which you then refute, implying that your argument is stronger. However, you have to keep in mind that your own experiences are neither facts nor scientific data and therefore must not be part of your argumentative essay. Additionally, not all claims you make are correct and you are lacking sources to back up your arguments. For example, providing multiple users with the same version of an e-book will eventually lead to higher costs than offering one copy of a printed book, and how can you support the claim about health issues? If

you have any questions regarding the essay, talk to me after class and we can discuss it further."

**Negative sender Appraisal and Low Performance Appraisal.** The teacher, whom Toni rather dislikes because s/he appears to be very strict and mean and you feel s/he is always trying to pick on you personally, will give subsequent feedback:

- Don't mention your own experience

- Inaccurate claims - ebooks not cheaper

- More detail?!

- The thesis is okay supported but misses resources

- Includes counterargument

### *FPQ*

Please put yourself in Toni's situation and answer the following questions as if you had received this feedback yourself.

You can do so by sliding the marker on the line that ranges from fully disagree to fully agree.

1. I would be satisfied with this feedback.

2. I would consider this feedback fair.

3. I would consider this feedback justified.

4. I would consider this feedback useful.

5. I would consider this feedback helpful.

6. This feedback would provide me with a lot of support.

7. I would accept this feedback.

8. I would dispute this feedback. (R)

9. I would reject this feedback. (R)

10. I would be willing to improve my performance.

11. I would be willing to invest a lot of effort in my essay revision.

12. I would be willing to work on further essay assignments.

13. I would feel … if I received this feedback on my essay.

   a. Offended. (N)

   b. Satisfied. (P)

   c. Angry. (N)

   d. Confident. (P)

   e. Frustrated. (N)

   f. Successful. (P)

**2. German Version**

*Demographics*

1. Wie alt bist du?

2. Was ist dein Geschlecht?

    a. Weiblich

    b. Männlich

    c. Andere

    d. Möchte ich nicht angeben

3. In welcher Jahrgangsstufe bist du derzeit?

    a. 11. Jahrgang

    b. 12. Jahrgang

    c. 13. Jahrgang

*Self-concept*

1. Akademisches Selbstverständnis

    a. Verglichen mit meinen Altersgenossen habe ich gute schriftliche Fähigkeiten.

    b. Meine schriftlichen Leistungen werden gut bewertet.

    c. Texte schreiben fällt mir leicht.

    d. Ich verbessere meine schriftlichen Fähigkeiten mit Leichtigkeit.

    e. Ich war schon immer gut im Texte verfassen.

2. Emotionales Selbstverständnis

    a. Es gibt viele Dinge, die mich nervös machen.

    b. Wenn ältere Menschen etwas zu mir sagen, werde ich sehr nervös.

    c.   Ich werde nervös, wenn der Lehrer mir eine Frage stellt.

    d.   Ich bin nervös.

***Self-Proclaimed Influences on the Intention to Process the Feedback***

1. Welche Aspekte sind für dich wichtig zur Verarbeitung von Feedback, welches dir dein:e Lehrer:in zu einem von dir erfüllten Arbeitsauftrag gibt? (z.B. das Fach, die Beziehung zur Lehrkraft, deine Motivation, etc.) Bitte erkläre deine Auswahl in ein paar Sätzen.

***Scenario***

Im Rahmen des Deutschunterrichts soll Toni einen Aufsatz über eine bestimmte Aussage schreiben. Die Lehrkraft gab folgende Anweisungen:

    Argumentiere für oder gegen die unten stehende Aussage, indem du einen argumentativen Aufsatz schreibst:

Begründe deinen Standpunkt.

    1)  Beginne mit Argumenten, die deinen Standpunkt stützen.

    2)  Unterstütze jeden Punkt dafür mit spezifischen Gründen/Beispielen.

    3)  Gib Gegenargumente an.

    4)  Unterstütze jeden Punkt dagegen mit spezifischen Gründen/Beispielen.

 Aussage: Mit der Zunahme des digitalen Lernens werden öffentliche Bibliotheken überflüssig.

Toni hat den folgenden Aufsatz geschrieben:

    "Angesichts der zunehmenden Verbreitung des Online-Lernens haben einige Leute vorgeschlagen, die öffentlichen Bibliotheken zu schließen und stattdessen jedem einen E-Reader zu geben. Befürworter behaupten, dass E-Reader mehr Menschen zum Lesen ermutigen werden, weil Bücher durch sie leichter zugänglich sind, weil sie nur einen Klick entfernt sind.

Es wäre jedoch ein großer Fehler, Bibliotheken durch E-Reader zu ersetzen. Erstens werden digitale Bücher und Ressourcen mit weniger Lernen und mehr Problemen in Verbindung gebracht als gedruckte Ressourcen. Offenbar lesen die Menschen langsamer, behalten weniger Informationen und verstehen weniger von dem, was sie auf Tablets lesen, als von gedruckten Texten. Es hat sich auch gezeigt, dass zu langes Starren auf einen Bildschirm zahlreiche Gesundheitsprobleme verursachen kann. Ich weiß, dass meine Augen müde werden und mein Nacken schmerzt, wenn ich zu lange auf meinem E-Reader lese.

Zweitens bieten Bibliotheken mehr als nur die Ausleihe von Büchern an, z. B. Spielzeiten für Kleinkinder, Jobbörsen für Teenager und Begegnungsstätten für Senioren. Bibliotheken durch Tablets zu ersetzen würde die Menschen dazu ermutigen, noch mehr Zeit vor digitalen Bildschirmen zu verbringen, trotz der zahlreichen Probleme, die damit verbunden sind. Es würde auch den Zugang zu vielen Vorteilen von Bibliotheken beenden, auf die sich die Menschen verlassen haben."

*Feedback*

**Positive Sender Beurteilung und hohe Leistungsbeurteilung.** Die Lehrkraft, welche Toni sehr mag, weil sie sehr hilfsbereit und freundlich zu allen Schüler:innen zu sein scheint, gab folgendes Feedback:

"Du beginnst damit, das Thema zu erklären und beide Seiten des Arguments darzulegen, was dir gut gelungen ist. Obwohl du deine Position recht spät preisgibst, begründest du deine Behauptungen für den Rest des Aufsatzes. Am Ende führst du ein Gegenargument an, welches du wiederlegst, um zu zeigen, dass dein Argument stärker ist. Denk aber daran, dass deine eigenen Erfahrungen weder Fakten noch wissenschaftliche Daten sind und daher nicht Teil des Aufsatzes sein dürfen. Außerdem

sind nicht alle Behauptungen, die du aufstellst, richtig und es fehlen Quellen, um die Argumente zu untermauern. Zum Beispiel führt die Bereitstellung eines E-Books für mehrere Nutzer zu höheren Kosten als die Bereitstellung eines gedruckten Buches, und wie kannst du die Behauptung über die gesundheitlichen Probleme belegen? Wenn du Fragen zum Aufsatz hast, können wir diese gerne nach dem Unterricht besprechen."

**Positive Sender Beurteilung und niedrige Leistungsbeurteilung.** Die Lehrkraft, welche Toni sehr mag, weil sie sehr hilfsbereit und freundlich zu allen Schüler:innen zu sein scheint, gab folgendes Feedback:

- Eigene Erfahrungen gehören nicht in die Argumentation.
- Vermeide unzutreffende Behauptungen - e-Reader sind im endeffekt nicht günstiger.
- Die These hat gut belegte Argumente aber es fehlen Quellenangaben.
- Gegenargumente sind effektiv angewendet.
- Gib mehr Details.

**Negative Absender Beurteilung und hohe Leistungsbeurteilung.** Die Lehrkraft, welche Toni nicht mag, weil sie sehr streng und gemein zu sein scheint und einem das Gefühl gibt, dass sie einen persönlich auf dem Kieker hat, gab folgendes Feedback:

"Du beginnst damit, das Thema zu erklären und beide Seiten des Arguments darzulegen, was dir gut gelungen ist. Obwohl du deine Position recht spät preisgibst, begründest du deine Behauptungen für den Rest des Aufsatzes. Am Ende führst du ein Gegenargument an, welches du wiederlegst, um zu zeigen, dass dein Argument stärker ist. Denk aber daran, dass deine eigenen Erfahrungen weder Fakten noch wissenschaftliche Daten sind und daher nicht Teil des Aufsatzes sein dürfen. Außerdem

sind nicht alle Behauptungen, die du aufstellst, richtig und es fehlen Quellen, um die Argumente zu untermauern. Zum Beispiel führt die Bereitstellung eines E-Books für mehrere Nutzer zu höheren Kosten als die Bereitstellung eines gedruckten Buches, und wie kannst du die Behauptung über die gesundheitlichen Probleme belegen? Wenn du Fragen zum Aufsatz hast, können wir diese gerne nach dem Unterricht besprechen."

**Negative Absender Beurteilung und niedrige Leistungsbeurteilung.** Die Lehrkraft, welche Toni nicht mag, weil sie sehr streng und gemein zu sein scheint und einem das Gefühl gibt, dass sie einen persönlich auf dem Kieker hat, gab folgendes Feedback:

- Eigene Erfahrungen gehören nicht in die Argumentation.
- Vermeide unzutreffende Behauptungen - e-Reader sind im endeffekt nicht günstiger.
- Die These hat gut belegte Argumente aber es fehlen Quellenangaben.
- Gegenargumente sind effektiv angewendet.
- Gib mehr Details.

*FPQ*

1. Ich würde mit diesem Feedback zufrieden sein.
2. Ich würde das Feedback als fair empfinden.
3. Ich würde dieses Feedback als gerechtfertigt empfinden.
4. Ich würde dieses Feedback als nützlich betrachten.
5. Ich würde dieses Feedback als hilfreich empfinden.
6. Dieses Feedback würde mir eine Große Hilfestellung sein.
7. Ich würde dieses Feedback akzeptieren.
8. Ich würde dieses Feedback anzweifeln. (R)

9. Ich würde dieses Feedback ablehnen. (R)

10. Ich wäre bereit, meine Leistung zu verbessern.

11. Ich wäre bereit, mir bei meine Überarbeitung viel Mühe zu geben.

12. Ich wäre bereit, an weiteren Aufgaben zur Textüberarbeitung zu arbeiten.

13. Ich würde mich ... fühlen, wenn ich dieses Feedback für meine Überarbeitung erhalten hätte.

    a. Verletzt. (N)

    b. Zufrieden. (P)

    c. Verärgert. (N)

    d. Selbstsicher. (P)

    e. Frustriert. (N)

    f. Erfolgreich. (P)