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Ask your peer! How requests for peer feedback affect peer feedback responses

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ABSTRACT

Peer feedback can be an effective learning aid. However, providing peer feedback so that it is used by the receiver, is very difficult. Adding feedback requests to the peer feedback process may improve the quality of peer feedback. However, little is known about how feedback requests affect peer feedback responses. In this study, fifty-four students in two master programs asked each other feedback on their thesis and in return, provided peer feedback. Their feedback requests were related predominantly to global-level (versus local-level) text issues. Peers' responses to the requests contained significantly more global-level positive evaluation, explanation and feedback aimed at content and style than additionally provided peer feedback. However, their responses did not contain significantly more global-level suggestions. Global-level, explained feedback is a sign for high-quality feedback. Therefore, adding feedback requests improves the quality of peer feedback. Still, students should also be trained to respond with global-level suggestions for improvement.

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Feedback-seeking; feedback requests; peer feedback; peer review; online learning; academic writing

Introduction

Feedback plays an important role in higher education (Nicol & Macfarlane-Dick, 2006), as it provides important information to revise one's work and improve one's performance (Butler & Winne, 1995). Peers might aid in the feedback process by providing personalized feedback in understandable language in addition to teacher feedback (Nicol, 2010). When peers provide feedback, this is referred to peer feedback, peer review or peer response (Chang, 2016; Gao et al., 2019). Peer feedback refers to the exchange of drafts between two or among multiple learners for oral, written or a mix of oral and written feedback (Chang, 2016). The feedback focus may be on global (e.g., content, cohesion/

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coherence, text organization), local (e.g., grammar, vocabulary, punctuations) or both global and local writing issues. Generally speaking, global feedback includes global concerns like argumentation line or structure. In contrast, local feedback deals with local concerns on the sentence-level, such as the clarity of sentences, grammar, and spelling (Zhu, 1995). Global feedback is more holistic in nature, while local feedback has a more narrow focus on superficial text issues (Nelson & Schunn, 2009).

Especially when teachers need to provide personalized written feedback to many students, written peer feedback might be useful (Pardo et al., 2019). Also, providing peer feedback can stimulate students to reflect on their own work and as such can help them to take (more) control over their own learning process (Nicol et al., 2014; Seifert & Feliks, 2019). Furthermore, providing and receiving peer feedback prepares students for later professional life because it allows students to practice generic skills like collaborating with others and communicating clearly (Sadler & Good, 2006; Topping, 1998).

However, an important prerequisite for the use of received (peer) feedback is its' quality (Nelson & Schunn, 2009; Schillings et al., 2020; Zhang et al., 2017). Research, though, consistently shows that untrained peer reviewers provide poor quality, local-level feedback, whereas trained peer reviewers provide better feedback characterized by a more balanced combination of global- and local-level feedback (Chang, 2016; Nelson & Schunn, 2009; Zhu, 1995). In addition, high-quality feedback contains justifications (i.e., explanations) for evaluative statements and suggestions for improvement (Gielen et al., 2010; Hattie & Timperley, 2007; Kulhavy & Stock, 1989; Van Blankenstein et al., 2021).

Besides the quality of feedback, there are also some other ways to optimize the use of peer feedback by students. Research shows that the quality of peer feedback can be improved with various methods, which include feedback training with rubrics and repeated practice (Camarata & Slieman, 2020), scripting the peer feedback process (Latifi et al., 2023; Peters et al., 2018), and using feedback prompts (Latifi et al., 2021). There is evidence that high quality feedback improves students' essay writing performance as well. For instance, Kerman et al. (2024) found that summary statements and suggestions for improvements in peer feedback predicted students' essay writing. In addition, Latifi et al. (2021) discovered that students who were prompted to give feedback, feedforward, or both, provided better feedback wrote better essays upon receiving this prompted feedback than students who were not prompted. Similar results were found in a later study, with the exception of the feedforward prompts, which did not improve feedback quality in that study. According to the authors, a possible reason for this was that students were more accustomed to receiving corrective feedback than feedforward with various alternative directions. Therefore, they might have found it difficult to come up with feedforward for their peers (Valero Haro et al., 2023).

Students might also make more use of peer feedback when they proactively request feedback from their peers. This has several potential learning benefits

for students. Proactively requesting feedback is not only an important professional skill (Anseel et al., 2015; Crommelinck & Anseel, 2013), it can also help students to focus their attention on relevant content and to develop critical thinking skills (Aflalo, 2021; Chin & Brown, 2002). Research indeed shows that students perform better on such higher-order cognitive skills when they generate questions about teaching material (Aflalo, 2021). Furthermore, requesting feedback stimulates self-regulated learning because the student takes more control over his own learning process (Micari & Calkins, 2021; Williams & Takaku, 2011). Furthermore, requesting feedback may encourage students to reflect on their own strengths and weaknesses (Nicol & Macfarlane-Dick, 2006). It may also increase students' attention to received feedback (Gibbs & Simpson, 2004; Nicol, 2010). A subsequent feedback dialogue about the feedback allows students to discuss and clarify the meaning of received feedback information (Zhu & Carless, 2018) and come to a better understanding of the goals, the received feedback, and ways to move forward (Boud & Molloy, 2013; Nicol, 2010; Schillings et al., 2020).

Despite these positive aspects mentioned in the literature, there is rather little research about the effects of written requests for peer feedback affect written peer feedback responses. Particularly, we know little about its relationship with peer feedback quality in terms of local versus global feedback. One of the few studies that has looked at the association between feedback requests and type of responses has been conducted by Gielen and De Wever (2015). In that study, students had to fulfil three consecutive assignments. Each assignment consisted of writing an abstract for a scientific paper in a wiki and to provide peer feedback on the abstracts of fellow students. Four conditions were compared, (1) a control condition, (2) a feedback request condition, (3) a content checklist condition and (4) a combination (i.e., feedback request and content checklist condition). An example of a feedback request was "Should I also include something about the specific focus of this study?" The quality of students' peer feedback was scored with the Feedback Quality Index (Prins et al., 2006). The results showed that the quality of peer feedback, in terms of e.g., the presence of content-related remarks, explanations for remarks and clear suggestions for improvement, improved significantly over time in all four conditions. In addition, requesting feedback seemed to promote the quality of peer feedback, but only in the initial stage of performance. Therefore, the added value of feedback requests remained unsure.

In a later reanalysis of the data, Voet et al. (2018) found more evidence for the positive effect of feedback requests on feedback quality. After controlling statistically for the length of feedback messages, students' peer feedback contained significantly more informative elaborations when their peers had submitted feedback requests. These findings suggest that feedback requests can indeed improve the quality of peer feedback. However, these findings come from only two studies. Moreover, Gielen and De Wever (2015) and Voet et al.

(2018) did not analyse the nature of the feedback requests. Knowing what kind of feedback requests students pose, might however, provide useful insights in which types of feedback requests promote which types of responses to those requests. If the nature of peer feedback is affected by the nature of feedback requests, teachers may use feedback requests as an instructional intervention to promote the quality of peer feedback.

Therefore, this study is set out to examine what impact students' peer feedback requests have on the quality of their peers' feedback. The study was conducted in an authentic setting and part of the project Ask Your Peer. In that project, students were trained in formulating feedback requests and responding with high-quality feedback. As part of the evaluation of the project, we were particularly interested in the detailed association between the type of feedback requests and the type of responses. It was hypothesized that the nature of the feedback requests would influence the nature of the peer feedback. In order to investigate this hypothesis, the following research questions were formulated:

1. What is the nature of students' feedback requests?
2. To what extent is peer feedback a response to those feedback requests?
3. What impact do feedback requests have on the nature of the peer feedback?

In addition, we investigated to what degree students complied with the process of requesting and giving peer feedback in order to check their degree of participation.

Methods

Context and participants

This descriptive study was conducted in two small-scale master programs in the field of health professions education. It was approved by the Educational Research Review Board of Leiden University Medical Center (file number: OEC/ERRB/20190709/1). Participants were 54 students of the two master programs (henceforth called program A and program B). Of each program, 27 students participated. All participants read and signed an informed consent letter in which they were informed about the study and could agree voluntarily that their feedback requests and peer feedback would be analysed for the purpose of the study. Both groups of students were in the phase of conducting their final master research project and writing their master thesis. During the program, students worked independently on different locations for a longer period, without seeing each other and their teachers frequently. Therefore, a project called "Ask your Peer" was set up to train students in requesting and giving peer feedback online, stimulate contact between students, and increase the amount of feedback on their thesis.

Materials and procedure

An e-module was developed in which students learned how to request and give online peer feedback. This module took about one hour to finish and contained two main steps: (1) a peer feedback training with instructions about feedback requests and principles of good feedback, and (2) a peer feedback assignment. In addition, students could consult several resources for writing their thesis in the e-module. We describe the study procedure in more detail below (also see Figure 1).

Step 1 contained two submodules: (1) "Learning goals and asking feedback" and (2) "Principles of giving feedback". The first submodule contained three parts that were titled (1a) "How to structure your progress", (1b) "Analysing your paper" and (1c) "Formulating your feedback questions". In 1a, students were instructed to ask themselves the question: "What do I want to improve?" by looking at the requirements of the assignment and previously received feedback. They also received instructions to use the aforementioned

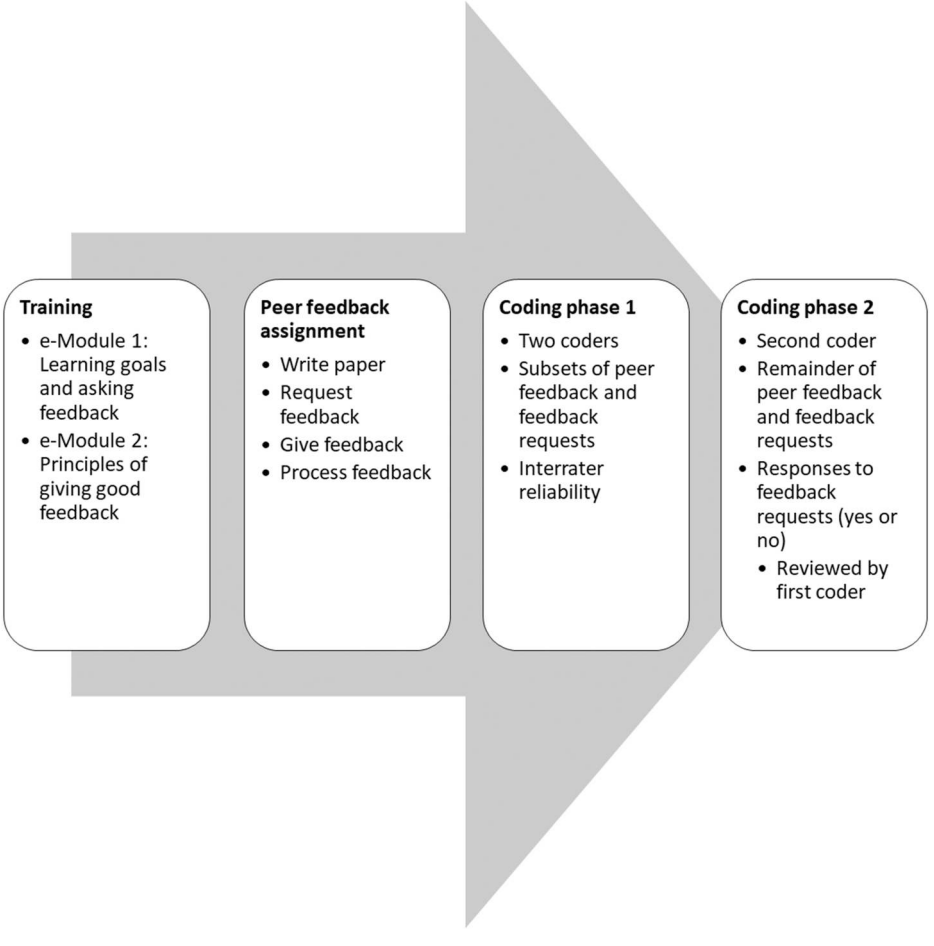

Figure 1. Overview of the study procedure.

online resources for writing a thesis. Furthermore, they were instructed to hand in a draft version of their thesis that also contained specific feedback requests on what they wanted to improve. They were told to ask for feedback on both local and global text issues. In 1b, students received instructions to analyse their own paper based on the requirements of the assignment and their own personal learning goals. In 1c, students were instructed to formulate specific feedback questions ("Be specific: vague questions will get vague answers"), to indicate on which area of the paper they wanted feedback ("Does your question concern the entire paper, or just one part?") and to refer to the grading rubric in their request if they were unsure about something (e.g., "We're supposed to use formal language, do you think I succeeded in my paper?").

The second submodule contained four parts: (2a) "3 principles of good feedback", (2b) "Feedback model", (2c) "Commenting strategies" and (2d) "Global versus local feedback". Part 2a explained three principles of good feedback based on Van den Berg et al. (2006): good feedback should contain (1) an evaluation, (2) an explanation for that evaluation, and (3) a suggestion for improvement. Part 2b contained a model text with feedback to illustrate which parts of the feedback contained evaluations, explanations and suggestions. In 2c, students could watch a video about commenting strategies in peer review (https://www.youtube.com/watch?v=GlSCMx9-fGA) and in 2d, the difference between global- and local-level feedback was explained. Global-level feedback was explained with four questions: "Is the focus of the paper clear? Is the overall goal communicated clearly? Does the paper have a sound structure (overall and within paragraphs)? Does the paper conform to the assignment instructions?" Local-level feedback was defined as feedback on grammar, spelling, formality, sentence-structure, punctuation, citations.

Step 2 included the peer review assignment. In this assignment, students were instructed to upload a draft of the introduction, materials and methods of their thesis for peer review. They were also told to formulate specific feedback questions for their peer reviewers. They received instructions to provide feedback on the drafts of two fellow students, ideally within two days of their posting of the draft. Students could then submit their draft with feedback questions in the electronic learning environment and peer review the drafts of two peers by writing annotated comments in those drafts. Figure 2 shows an example of a submitted draft with feedback questions and peer comments in response. Students were strongly encouraged to complete the peer review, but it was not a mandatory assignment for course credit.

Analyses

Nature of the peer feedback and feedback requests. The feedback requests and peer feedback comments were coded based on Van den Berg et al. (2006), Huisman et al. (2018), and Zhu (1995). The coding scheme referred to aspects

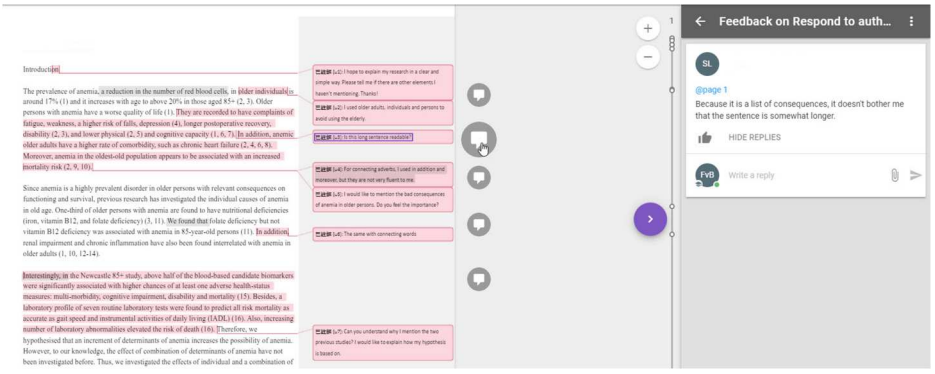

Figure 2. Example of a peer feedback assignment.

(content, structure, style), functions (evaluation, explanation and suggestion), and level (global or local) of feedback.

Aspects are the task criteria at which the feedback is aimed at, in this case "content", "structure" or "style" (Huisman et al., 2018; Van den Berg et al., 2006). *Content* refers to feedback on *what* is written, for instance the argumentation and concepts in the text. *Structure* addresses the internal structure and logical build-up of the text, for instance the use of linking words between sentences or paragraphs and how to present ideas in a logical order. *Style* refers to *how* something is written, such as the formulation of sentences, conciseness, grammar, and referencing.

Functions (Huisman et al., 2018; Van den Berg et al., 2006) relate to the purpose of the feedback message, in this case, "evaluation", "explanation" or "suggestion". *Evaluation* reflects a quality statement, either *positive* or *constructive* (i.e., aimed at improvement). *Suggestion* means a suggested revision and *explanation* refers to arguments that support evaluative statements or suggestions.

Local-level feedback addresses local concerns on the sentence-level (e.g., clarity of sentences, grammar and spelling). *Global-level* feedback aims at global concerns, such as a clear line of argumentation (Zhu, 1995).

The feedback requests were coded in the same way as the peer feedback, except for the fact that only the aspects (content, structure or style) and the level (global or local) could be coded. This was because per definition, feedback requests cannot contain feedback functions like evaluative statements and suggestions for improvement. Therefore, only aspects and global versus local level of the feedback requests were coded.

Coding procedure. The draft papers, feedback requests, and annotated peer feedback comments were visible in the electronic learning environment. Each separate feedback request and annotated peer feedback comment was copied manually from the electronic learning environment to two Microsoft Excel-files (one for each master program). These separate units were coded in

the two Excel-files while viewing the original draft papers, feedback requests, and annotated feedback comments in the electronic learning environment. Two coders coded the comments in order to minimize biases and improve the reliability of the coding process. The first author (also referred to as "first coder") and an independent, second coder executed the coding process using a codebook that was developed in the context of the current study.

First, both coders coded the functions of a random sample of 85 feedback comments. Functions were coded as either occurring (1) or not occurring (0) in a feedback comment. Feedback comments could receive multiple codes (e.g., "positive evaluation" plus "explanation"). The interrater reliability was measured with Cohen's Kappa (evaluation: Kappa = .96, *SE* = .04, explanation: Kappa = .74, *SE* = .07, suggestion: Kappa = .90, *SE* = .06).

Next, both coders coded the aspects of the same sample of 85 feedback comments in the same way: as either occurring or not occurring (content: Kappa = .46, *SE* = .12, structure: Kappa = .49, *SE* = .12, style: Kappa = .40, *SE* = .10). Here also, comments could receive multiple codes (e.g., "content" and "style"). To increase the interrater reliability, differences were discussed and a new, different random sample of 67 feedback comments was coded. Global and local level was also coded at this time, in the same way as functions and aspects, except that the feedback comments could not receive multiple codes. In other words, the feedback comments were coded as either "local" or "global". The Kappa-values of the aspects increased after this extra coding round (content: Kappa = .66, *SE* = .11, structure: Kappa = , 74, *SE* = .12, style: Kappa = .91, *SE* = .05). The Kappa-values of global- and local-level feedback were high (global: Kappa = .88, *SE* = .07, local: Kappa = .84, *SE* = .07).

Subsequently, both coders coded a random sample of 27 feedback requests, which resulted in substantial to perfect interrater agreements (content: Kappa = .81, *SE* = .13, structure: Kappa = 1.00, *SE* = 0.00, style: Kappa = .70, *SE* = .16, global: Kappa = .78, *SE* = .12, local: Kappa = .59, *SE* = .17).

After each round of coding, the two coders discussed their differences, reached consensus on those differences, and updated the codebook accordingly. After the last round, the second coder continued to code the remaining peer feedback and feedback requests individually. While doing this, the second coder also marked in the Excel-files which feedback comments answered the feedback requests and which comments did not (i.e., were additional feedback). The first coder reviewed all those codes to validate these results.

Statistical analysis. In order to create a better overview of the functions and aspects of the peer feedback, the codes of these functions and aspects were clustered with the codes of the feedback level (global or local). The same was done for the feedback requests. This created clusters of global-content, local-content, etc., which were used as the outcome measures of this study. Chi-square tests were executed on these outcome measures in IBM Statistics 25 to explore the relationship between answering feedback requests (yes or no) and the nature of the peer

feedback. Inspired by Keister et al. (2012), radar graphs were created to visualize the nature of the feedback requests and peer feedback that either answered or did not answer the feedback requests. These graphs were based on percentages to increase readability and interpretation. The percentages were calculated by dividing the frequency of each outcome measure by the total frequency of aspects or functions. For instance, the number of "global-content" codes was divided by the total number of coded aspects and the number of "global-suggestion" codes was divided by the total number of coded functions.

Inspired by Espasa et al. (2013), student participation was analysed by counting various types of contributions to the peer feedback process. More specifically, the following measures were used for student participation: number of students who submitted a paper, number of students who requested peer feedback, number of students who submitted peer feedback, total number of feedback requests, total number of peer feedback comments that were answers to feedback requests, and total number of additional peer feedback comments (i.e., comments that were not answers to feedback requests). These student participation results are presented below first.

Results

Student participation

In both programs, most students participated in the whole process of submitting a paper, requesting feedback, and giving peer feedback (Table 1). Out of the 27 students in each program, 25 students in program A and 23 students in program B submitted a draft of their paper. In program A and B, 18 respectively 21 students also submitted feedback requests. Furthermore, 23 students in program A and 27 students in program B submitted peer feedback (note that in program B more students submitted peer feedback than a draft paper). The 18 students who requested feedback in program A submitted a total of 98 feedback requests, whereas the 21 students who requested feedback in program B submitted 61 feedback requests. Their peers responded with 129 feedback comments in program A and with 97 feedback comments in program B. In addition, the peers wrote 409 additional feedback comments in program A and 278 additional comments in program B.

Table 1. Participation in the peer feedback process.

	Program A	Program B
Participating students (*n*)	27	27
No of submitted papers	25	23
No of students requesting feedback	18	21
No of students providing peer feedback	23	27
Feedback requests	98	61
Answers to feedback requests	129	97
Additional feedback comments	409	278

Nature of the feedback requests

Overall, students' feedback requests were aimed mostly at the global level and less at the local level (Table 2), although there were some differences between program A and B. In program A, 62% of the feedback requests was aimed at the global level; in program B, this was 82%. In both programs, global-level feedback requests were aimed particularly at content and less at structure and style. Local feedback requests were aimed mostly at style in program A and at content in program B.

Nature of the peer feedback

The aspects of students' peer feedback that answered feedback requests showed a pattern like the aspects of the feedback requests (Table 2, Figure 3 and Figure 4). In program A, 53% and in program B, 74% of the responses to the feedback requests was aimed at global text issues. This global feedback focused particularly on content in both programs and in program B also to a large degree on structure. Considering the peer feedback functions (Table 3, Figures 5 and 6), 48% of the responses in program A and 67% of the responses in program B covered feedback on global issues. In program A, responses to requests were thus distributed more evenly over global and local issues than in program B. In program B, global positive evaluation and explanation occurred the most (Figure 6).

The Chi-square tests revealed several significant associations between answering feedback requests (yes or no) and the peer feedback aspects (Table 4). In both programs, peer feedback that responded to feedback requests focused significantly more often on global-content ($p = .03$ and $p = .001$) and global-style ($p = .02$ and $p = .01$) than peer feedback that did not answer feedback requests. Also, in both programs, peer feedback that answered feedback requests was aimed significantly less at local-style ($p = .03$ and $p = .000$) than peer feedback that did not answer feedback requests. Thus, feedback requests seemed to promote global feedback aimed at style and content and to decrease feedback aimed at local style issues.

In program B, there was also a significant positive association between answering feedback requests and peer feedback aimed at global-structure ($p = .000$). In contrast, there was a negative association between responding to feedback requests and peer feedback aimed at local-content ($p = .000$). Therefore, in program B the feedback requests also seemed to promote global feedback aimed at structure and to diminish feedback aimed at local content.

Regarding the peer feedback functions, the Chi-square tests (Table 5) showed in both programs a significant positive relationship between answering feedback requests and global-positive evaluation ($p = .005$ and $p = .000$) and global-explanation ($p = .02$ and $p = .000$). Also, in both programs, there was a significant negative association between answering feedback requests and local-constructive

Table 2. Frequencies and percentages of feedback request aspects and peer feedback aspects.

	Global-Content	Global-Structure	Global-Style	Local-Content	Local-Structure	Local-Style	Totals
Feedback request aspects							
Program A	27 (29.35%)	15 (16.30%)	15 (16.30%)	7 (7.61%)	3 (3.26%)	25 (27.17%)	92 (100%)
Program B	28 (35.90%)	17 (21.79%)	19 (24.36%)	8 (10.26%)	1 (1.28%)	5 (6.41%)	78 (100%)
Peer feedback aspects							
Program A							
Answers	31 (22.14%)	22 (15.71%)	21 (15.00%)	12 (8.57%)	6 (4.29%)	48 (34.29%)	140 (100%)
Additional	64 (14.85%)	52 (12.06%)	37 (9%)	53 (13%)	28 (68%)	197 (48%)	431 (100%)
Program B							
Answers	32 (28.07%)	34 (29.82%)	18 (15.79%)	5 (4.39%)	5 (4.39%)	20 (17.54%)	114 (100%)
Additional	46 (15.65%)	35 (11.90%)	25 (8.50%)	63 (21.43%)	9 (3.06%)	116 (39.46%)	294 (100%)

Note: "Answers" means peer feedback that responds to feedback requests; "Additional" means additional peer feedback that does not respond to feedback requests.

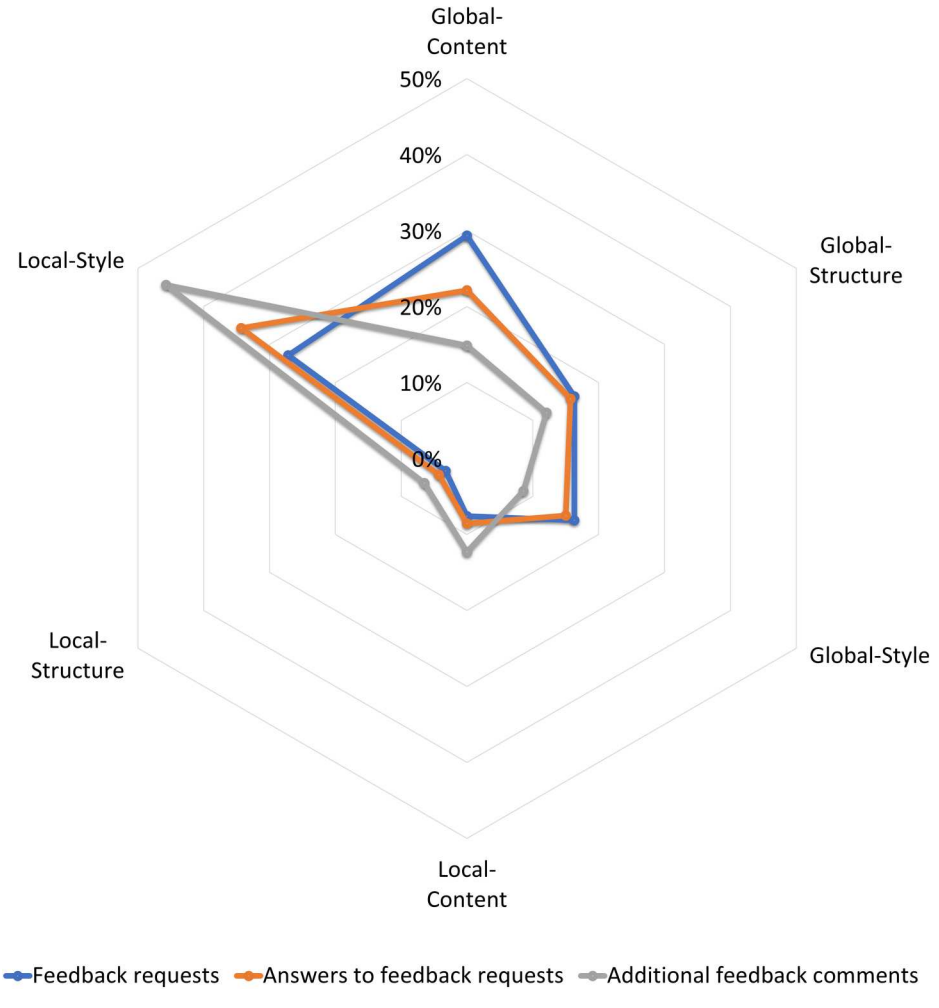

Figure 3. Feedback request aspects and peer feedback aspects program A.

evaluation ($p = .0001$ and $p = .000$) and local-suggestion ($p = .0001$ and $p = .000$). Thus, feedback requests seemed to promote global positive feedback and explanation and to diminish local, constructive evaluations and suggestions for improvement. In program A, there was also a significant positive relationship between answering feedback requests and local-positive evaluation ($p = .001$), but the occurrence of local-positive evaluation was very low.

Discussion

This study aimed to explore how students' feedback requests influenced their peer feedback responses. The hypothesis, suggesting that the nature of these requests impacts the responses, could signify feedback requests as a valuable instructional tool for enhancing peer feedback quality. The findings revealed a preference for global-level feedback requests over local-level ones. Confirming

Table 3. Frequencies and percentages of peer feedback functions.

	Peer feedback functions								
	Global-Positive	Global-Constr.	Global-Expl.	Global-Sugg.	Local-Positive	Local-Constr.	Local-Expl.	Local-Sugg.	Totals
Program A									
Answers	28 (10.61%)	27 (10.23%)	40 (15.15%)	32 (12.12%)	11 (4.17%)	48 (18.18%)	32 (12.12%)	46 (17.42%)	264 (100%)
Additional	48 (5.58%)	86 (10.00%)	86 (10.00%)	83 (9.65%)	9 (1.05%)	244 (28.37%)	80 (9.30%)	224 (26.05%)	860 (100%)
Program B									
Answers	42 (19.53%)	24 (11.16%)	55 (25.58%)	24 (11.16%)	8 (3.72%)	24 (11.16%)	17 (7.91%)	21 (9.77%)	215 (100%)
Additional	28 (4.86%)	57 (9.99%)	56 (9.72%)	53 (9.20%)	14 (2.43%)	163 (28.30%)	71 (12.33%)	134 (23.26%)	576 (100%)

Note: "Constr." means "Constructive"; "Expl." means "Explanation", "Sugg." means "Suggestion", "Answers" means peer feedback that responds to feedback requests, "Additional" means additional peer feedback that does not respond to feedback requests.

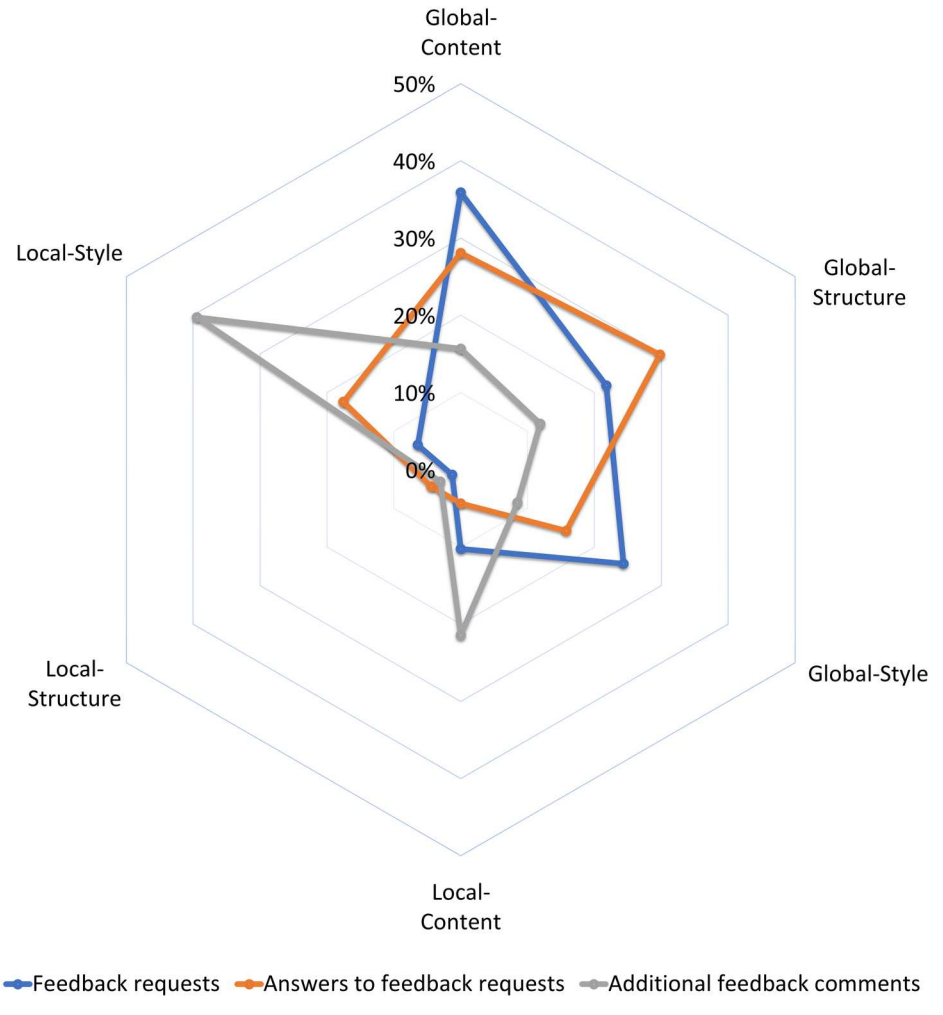

Figure 4. Feedback request aspects and peer feedback aspects program B.

our hypothesis, responses to these requests contained notably more feedback on global text aspects like content, style, and, in Program B, text structure. Students predominantly provided global-level positive evaluations and explanations, with limited local-level feedback regarding style and content. Constructive evaluations and suggestions for local revisions were infrequent. Additionally, responses included significantly more global-level explanations for evaluative statements, signifying high-quality feedback, as supported by previous studies (Gielen et al., 2010; Kulhavy & Stock, 1989). Earlier research (Voet et al., 2018) also corroborated these informative elaborations in peer feedback following feedback requests.

These findings imply that feedback requests can be used to influence the quality of peer feedback which is characterized by a mix of global- and local-level feedback. However, students also tended to be less critical about their

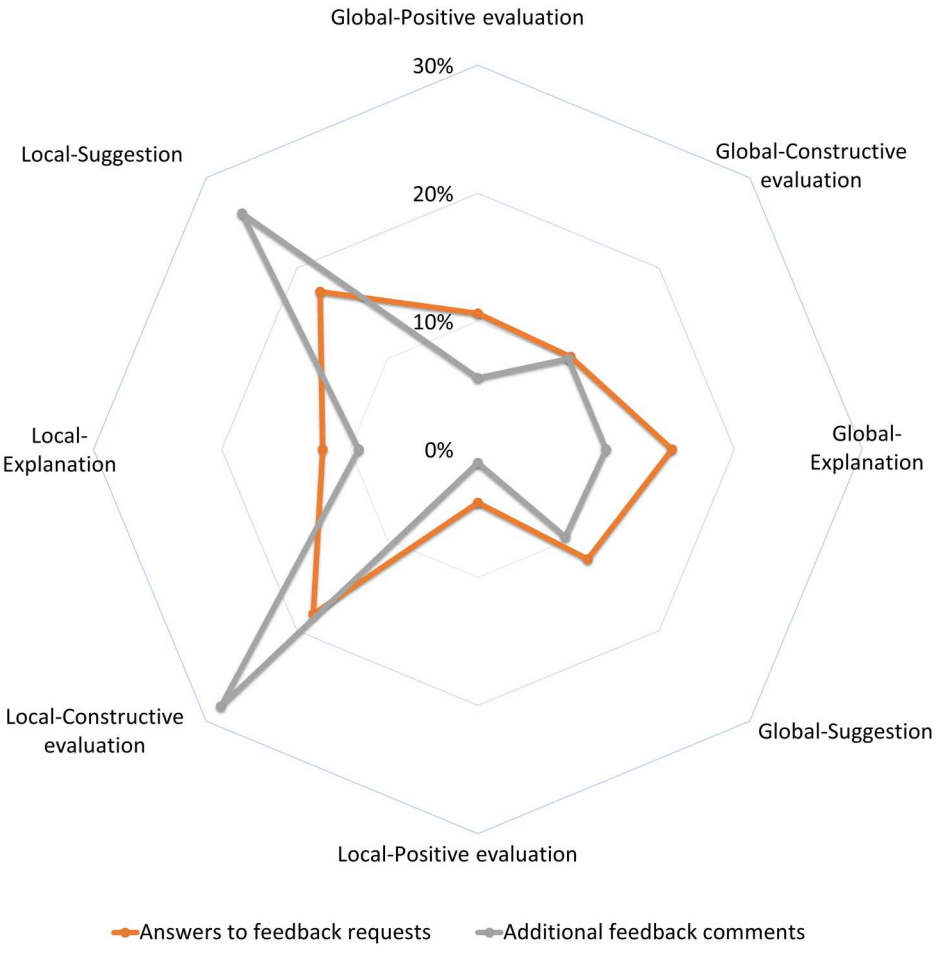

Figure 5. Peer feedback functions program A.

peers' work when answering feedback requests. When they answered feedback requests, they evaluated their peers' writing significantly more positively than when they did not answer those requests. In their answers to the feedback requests, they also did not suggest significantly more improvements. Apparently, students were not inclined to be critical and suggest improvements when answering feedback requests. Alternatively, it is possible that students were unable to come up with suggestions for improvement. Although peer feedback quality can be improved with feedback prompts, feedforward prompts, or a combination of both (Latifi et al., 2021; Valero Haro et al., 2023), feedforward prompts have not always shown to improve peer feedback. This might be because students are not used to receiving alternative directions for improvement (Valero Haro et al., 2023). As a consequence, they may find it difficult to generate feedforward themselves, which often requires creativity in finding alternative solutions. Still, it is important that students are able to do this, as suggestions for improvement are an indicator of high-quality

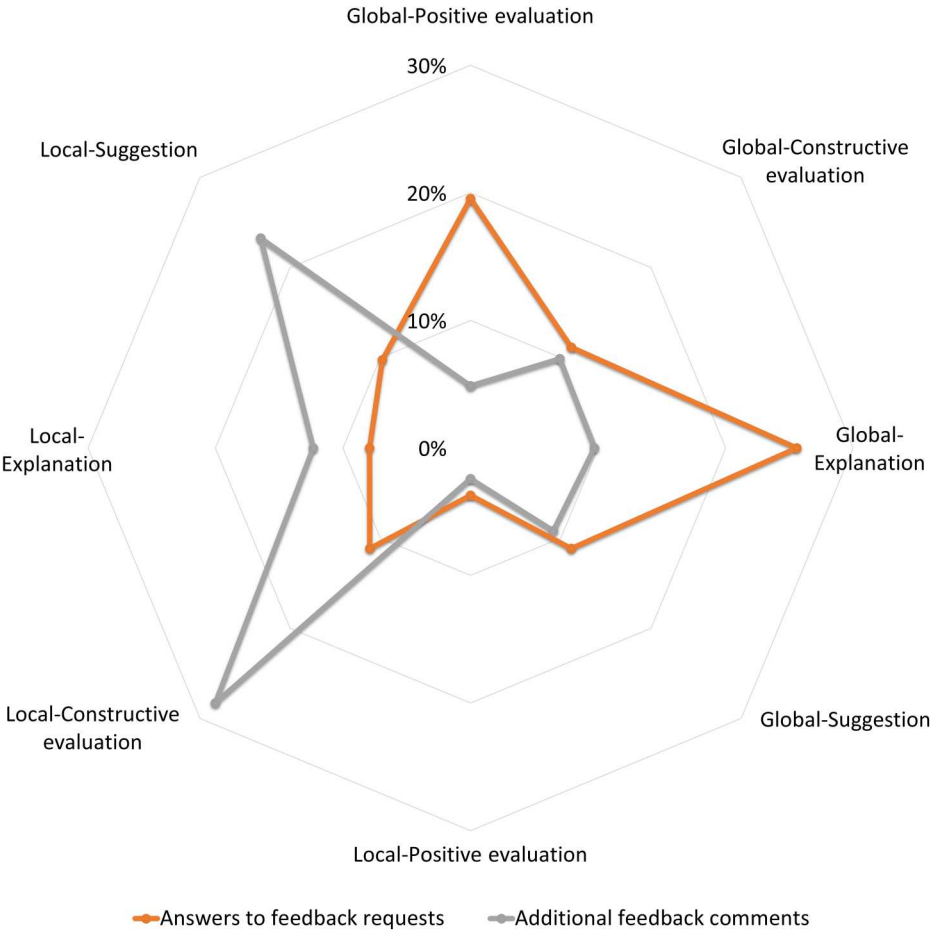

Figure 6. Peer feedback functions program B.

feedback (Gielen & De Wever, 2015; Hattie & Timperley, 2007). Moreover, receiving suggestions for improvement may even be conditional for using feedback (Nelson & Schunn, 2009). Also, peers' suggestions for improvement predict students' writing performance (Kerman et al., 2024). This stresses the importance of good feedforward in peer feedback. Therefore, it seems necessary to emphasize suggesting improvements even more in future peer feedback training that involves requesting feedback.

Incorporating feedback requests in peer feedback training might also be useful to develop students' *feedback literacy*: their ability to understand, use, and benefit from feedback (Carless, 2022). An important premise of feedback literacy is that students become proactive agents in the process of giving, processing, and responding to feedback. In order to achieve this, students need to develop positive dispositions towards feedback and feedback skills (Carless & Boud, 2018; Molloy et al., 2020). The present findings suggest that stimulating students to proactively request feedback has a positive impact on their feedback skills.

Table 4. Associations between answering feedback requests (yes / no) and feedback aspects.

	Peer feedback aspects					
Significance	Global-Content	Global-Structure	Global-Style	Local-Content	Local-Structure	Local-Style
Program A						
Chi-square	4.74	1.56	5.33	1.23	.80	4.75
p	.03*	.21	.02*	.27	.37	.03*
Program B						
Chi-square	11.80	24.63	6.48	14.85	.74	13.86
p	.001*	.000*	.011*	.000*	.39	.000*

*Chi-square statistic is significant at the .05 level. Significant values indicate a significant difference between the observed and expected number of feedback aspects as a function of answering feedback requests (yes or no).

Table 5. Associations between answering feedback requests (yes / no) and feedback functions.

	Peer feedback functions							
Significance	Global-Positive	Global-Constr.	Global-Expl.	Global-Sugg.	Local-Positive	Local-Constr.	Local-Expl.	Local-Sugg.
Program A								
Chi-square	8.04	.001	5.45	1.19	10.97	19.91	1.64	14.32
p	.005*	.98	.02*	.28	.001*	.0001*	.20	.0001*
Program B								
Chi-square	52.29	.76	46.12	1.42	1.34	33.04	2.57	20.91
p	.000*	.38	.000*	.23	.25	.000*	.11	.000*

Note: "Constr." means "Constructive"; "Expl." means "Explanation", "Sugg." means "Suggestion."
*Chi-square statistic is significant at the .05 level. Significant values indicate a significant difference between the observed and expected number of feedback functions as a function of answering feedback requests (yes or no).

Limitations

A limitation of this study is that it was performed with two small samples of students and that it did not implement a randomized experimental design to compare the effect of feedback requests with a control group. Instead, the effect of feedback requests was estimated by examining associations between answering feedback requests and the nature of the peer feedback in terms of aspects, functions and level. Nevertheless, future studies might adopt an experimental approach in order to validate the results found in this study. Moreover, providing peer feedback was a formative exercise (i.e., students did not receive any course credits for reviewing and could decide not to request feedback, review or respond). Nevertheless, it is interesting to see that most students submitted a paper, requested feedback and gave it to their peers. Moreover, students provided much more feedback than their peers requested, so apparently, they were willing to give feedback even without being prompted by feedback requests. In focus group interviews, Cartney (2010) discovered that students who engaged well with peer feedback processes felt good about being able to help others. She interpreted this predisposition as an "act of academic altruism (p. 558)." McConlogue (2015) found similar signs of academic altruism in students that she interviewed about peer feedback. In the present study, students may have acted in a similar altruistic way because they already knew each other. From the perspective of self-

determination theory (Ryan & Deci, 2000), this can be explained as a feeling of social relatedness between peers. It can also be argued that the students experienced a feedback-friendly culture, which is characterized by willingness to ask feedback (Baker et al., 2013; Leenknecht et al., 2019). Future studies could adopt an experimental approach in order to validate these results.

In addition, for students' privacy reasons this study did not collect data on student characteristics that have shown to affect peer feedback quality, such as gender (Noroozi et al., 2022), students' level of knowledge (Alqassab et al., 2018) and their sense of value for providing peer feedback (Tornwall et al., 2021). Although the focus of this study was not on the effect of student characteristics on peer feedback quality, it cannot be ruled out that such characteristics had an impact on the results.

Also, feedback dialogue between students after requesting and providing peer feedback was not studied. Feedback literate students proactively seek feedback and continue a dialogue about the feedback when necessary (Carless & Boud, 2018; Molloy et al., 2020). Such a dialogue can help students to understand assessment criteria and result in concrete suggestions for improvement (Schillings et al., 2020). However, in online learning settings, students do not always use opportunities for continued dialogue after peer feedback interventions (Filius et al., 2018). Since feedback dialogue is an important driver for proactive recipience of feedback (Winstone et al., 2017), future research should focus more on studying feedback dialogue between peers.

Conclusion and implications

In sum, incorporating feedback requests in peer feedback training may be a promising method to improve the quality of peer feedback in online learning. In this study, feedback requests seemed to affect the quality of peer feedback, as was demonstrated by increases in global-level feedback and global-level explanations for evaluations. However, students also seemed less critical when answering feedback requests and should therefore be instructed more explicitly to suggest global-level improvements in their answers. Furthermore, they should be instructed more explicitly to make revisions based on the received peer feedback, for example through feedback dialogue, or by writing a response or rebuttal to their peers' comments (Carless, 2022). Future research may validate the present findings with experimental research and examine the feedback dialogue between students after requesting and providing peer feedback.

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Geolocation information

This study was conducted in the Netherlands.

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Data availability statement

The anonymised datasets used and / or analysed during the current study are available from the corresponding author on reasonable request.

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References

Aflalo, E. (2021). Students generating questions as a way of learning. *Active Learning in Higher Education*, *22*(1), 63–75. https://doi.org/10.1177/1469787418769120

Alqassab, M., Strijbos, J.-W., & Ufer, S. (2018). Training peer-feedback skills on geometric construction tasks: Role of domain knowledge and peer-feedback levels. *European Journal of Psychology of Education*, *33*(1), 11–30. https://doi.org/10.1007/s10212-017-0342-0

Anseel, F., Beatty, A. S., Shen, W., Lievens, F., & Sackett, P. R. (2015). How are we doing after 30 years? A meta-analytic review of the antecedents and outcomes of feedback-seeking behavior. *Journal of Management*, *41*(1), 318–348. https://doi.org/10.1177/0149206313484521

Baker, A., Perreault, D., Reid, A., & Blanchard, C. M. (2013). Feedback and organizations: Feedback is good, feedback-friendly culture is better. *Canadian Psychology/Psychologie Canadienne*, *54*(4), 260–268. https://doi.org/10.1037/a0034691

Boud, D., & Molloy, E. (2013). Rethinking models of feedback for learning: The challenge of design. *Assessment & Evaluation in Higher Education*, *38*(6), 698–712. https://doi.org/10.1080/02602938.2012.691462

Butler, D. L., & Winne, P. H. (1995). Feedback and self-regulated learning: A theoretical synthesis. *Review of Educational Research*, *65*(3), 245–281. https://doi.org/10.3102/00346543065003245

Camarata, T., & Slieman, T. A. (2020). Improving student feedback quality: A simple model using peer review and feedback rubrics. *Journal of Medical Education and Curricular Development*, *7*. https://doi.org/10.1177/2382120520936604

Carless, D. (2022). From teacher transmission of information to student feedback literacy: Activating the learner role in feedback processes. *Active Learning in Higher Education*, *23*(2), 143–153. https://doi.org/10.1177/1469787420945845

Carless, D., & Boud, D. (2018). The development of student feedback literacy: Enabling uptake of feedback. *Assessment & Evaluation in Higher Education*, *43*(8), 1315–1325. https://doi.org/10.1080/02602938.2018.1463354

Cartney, P. (2010). Exploring the use of peer assessment as a vehicle for closing the gap between feedback given and feedback used. *Assessment & Evaluation in Higher Education*, *35*(5), 551–564. https://doi.org/10.1080/02602931003632381

Chang, C. Y.-H. (2016). Two decades of research in L2 peer review. *Journal of Writing Research*, *8*(1), 81–117. https://doi.org/10.17239/jowr-2016.08.01.03

Chin, C., & Brown, D. E. (2002). Student-generated questions: A meaningful aspect of learning in science. *International Journal of Science Education*, *24*(5), 521–549. https://doi.org/10.1080/09500690110095249

Crommelinck, M., & Anseel, F. (2013). Understanding and encouraging feedback-seeking behaviour: A literature review. *Medical Education*, *47*(3), 232–241. https://doi.org/10.1111/medu.12075

Espasa, A., Guasch, T., & Alvarez Valdivia, I. (2013). Analysis of feedback processes in online group interaction: A methodological model. *Digital Education Review*, *23*, 59–73.

Filius, R. M., de Kleijn, R. A. M., Uijl, S. G., Prins, F. J., van Rijen, H. V. M., & Grobbee, D. E. (2018). Strengthening dialogic peer feedback aiming for deep learning in SPOCs. *Computers & Education*, *125*, 86–100. https://doi.org/10.1016/j.compedu.2018.06.004

Gao, Y., Schunn, C. D. D., & Yu, Q. (2019). The alignment of written peer feedback with draft problems and its impact on revision in peer assessment. *Assessment & Evaluation in Higher Education*, *44*(2), 294–308. https://doi.org/10.1080/02602938.2018.1499075

Gibbs, G., & Simpson, C. (2004). Conditions under which assessment supports students' learning. *Learning and Teaching in Higher Education*, *1*, 3–31. https://doi.org/10.1007/978-3-8348-9837-1

Gielen, M., & De Wever, B. (2015). Scripting the role of assessor and assessee in peer assessment in a wiki environment: Impact on peer feedback quality and product improvement. *Computers & Education*, *88*, 370–386. https://doi.org/10.1016/j.compedu.2015.07.012

Gielen, S., Peeters, E., Dochy, F., Onghena, P., & Struyven, K. (2010). Improving the effectiveness of peer feedback for learning. *Learning and Instruction*, *20*(4), 304–315. https://doi.org/10.1016/j.learninstruc.2009.08.007

Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, *77*(1), 81–112. https://doi.org/10.3102/003465430298487

Huisman, B., Saab, N., van Driel, J., & van den Broek, P. (2018). Peer feedback on academic writing: Undergraduate students' peer feedback role, peer feedback perceptions and essay performance. *Assessment & Evaluation in Higher Education*, *43*(6), 955–968. https://doi.org/10.1080/02602938.2018.1424318

Keister, D., Larson, D., Dostal, J., & Baglia, J. (2012). The radar graph: The development of an educational tool to demonstrate resident competency. *Journal of Graduate Medical Education*, *4*(2), 220–226. https://doi.org/10.4300/JGME-D-11-00163.1

Kerman, N. T., Noroozi, O., Banihashem, S. K., Karami, M., & Biemans, H. J. A. (2024). Online peer feedback patterns of success and failure in argumentative essay writing. *Interactive Learning Environments*, *32*(2), 614–626. https://doi.org/10.1080/10494820.2022.2093914

Kulhavy, R. W., & Stock, W. A. (1989). Feedback in written instruction: The place of response certitude. *Educational Psychology Review*, *1*(4), 279–308. https://doi.org/10.1007/bf01320096

Latifi, S., Noroozi, O., & Talaee, E. (2021). Peer feedback or peer feedforward? Enhancing students' argumentative peer learning processes and outcomes. *British Journal of Educational Technology*, *52*(2), 768–784. https://doi.org/10.1111/bjet.13054

Latifi, S., Noroozi, O., & Talaee, E. (2023). Worked example or scripting? Fostering students' online argumentative peer feedback, essay writing and learning. *Interactive Learning Environments*, *31*(2), 655–669. https://doi.org/10.1080/10494820.2020.1799032

Leenknecht, M., Hompus, P., & van der Schaaf, M. (2019). Feedback seeking behaviour in higher education: The association with students' goal orientation and deep learning approach. *Assessment & Evaluation in Higher Education*, *44*(7), 1069–1078. https://doi.org/10.1080/02602938.2019.1571161

McConlogue, T. (2015). Making judgements: Investigating the process of composing and receiving peer feedback. *Studies in Higher Education*, *40*(9), 1495–1506. https://doi.org/10.1080/03075079.2013.868878

Micari, M., & Calkins, S. (2021). Is it OK to ask? The impact of instructor openness to questions on student help-seeking and academic outcomes. *Active Learning in Higher Education*, *22*(2), 143–157. https://doi.org/10.1177/1469787419846620

Molloy, E., Boud, D., & Henderson, M. (2020). Developing a learning-centred framework for feedback literacy. *Assessment & Evaluation in Higher Education*, *45*(4), 527–540. https://doi.org/10.1080/02602938.2019.1667955

Nelson, M. M., & Schunn, C. D. (2009). The nature of feedback: How different types of peer feedback affect writing performance. *Instructional Science*, *37*(4), 375–401. https://doi.org/10.1007/s11251-008-9053-x

Nicol, D. (2010). From monologue to dialogue: Improving written feedback processes in mass higher education. *Assessment & Evaluation in Higher Education*, *35*(5), 501–517. https://doi.org/10.1080/02602931003786559

Nicol, D. J., & Macfarlane-Dick, D. (2006). Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. *Studies in Higher Education*, *31*(2), 199–218. https://doi.org/10.1080/03075070600572090

Nicol, D., Thomson, A., & Breslin, C. (2014). Rethinking feedback practices in higher education: A peer review perspective. *Assessment & Evaluation in Higher Education*, *39*(1), 102–122. https://doi.org/10.1080/02602938.2013.795518

Noroozi, O., Banihashem, S. K., Taghizadeh Kerman, N., Parvaneh Akhteh Khaneh, M., Babayi, M., Ashrafi, H., & Biemans, H. J. A. (2022). Gender differences in students' argumentative essay writing, peer review performance and uptake in online learning environments. *Interactive Learning Environments*, *31*(10), 6302–6316. https://doi.org/10.1080/10494820.2022.2034887

Pardo, A., Jovanovic, J., Dawson, S., Gašević, D., & Mirriahi, N. (2019). Using learning analytics to scale the provision of personalised feedback. *British Journal of Educational Technology*, *50*(1), 128–138. https://doi.org/10.1111/bjet.12592

Peters, O., Körndle, H., & Narciss, S. (2018). Effects of a formative assessment script on how vocational students generate formative feedback to a peer's or their own performance. *European Journal of Psychology of Education*, *33*(1), 117–143. https://doi.org/10.1007/s10212-017-0344-y

Prins, F. J., Sluijsmans, D. M. A., & Kirschner, P. A. (2006). Feedback for general practitioners in training: Quality, styles, and preferences. *Advances in Health Sciences Education*, *11*(3), 289. https://doi.org/10.1007/s10459-005-3250-z

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68–78. https://doi.org/10.1037/0003-066X.55.1.68

Sadler, P. M., & Good, E. (2006). The impact of self- and peer-grading on student learning. *Educational Assessment*, *11*(1), 1–31. https://doi.org/10.1207/s15326977ea1101_1

Schillings, M., Roebertsen, H., Savelberg, H., Whittingham, J., & Dolmans, D. (2020). Peer-to-peer dialogue about teachers' written feedback enhances students' understanding on how to improve writing skills. *Educational Studies*, *46*(6), 693–707. https://doi.org/10.1080/03055698.2019.1651692

Seifert, T., & Feliks, O. (2019). Online self-assessment and peer-assessment as a tool to enhance student-teachers' assessment skills. *Assessment & Evaluation in Higher Education*, *44*(2), 169–185. https://doi.org/10.1080/02602938.2018.1487023

Topping, K. (1998). Peer assessment between students in colleges and universities. *Review of Educational Research*, *68*(3), 249–276. https://doi.org/10.3102/00346543068003249

Tornwall, J., Xie, K., Yu, S. L., Stein, D., Zurmehly, J., & Nichols, R. (2021). Effects of knowledge and value on quality of supportive peer feedback. *Nurse Educator*, *46*(3), 174–179. https://doi.org/10.1097/nne.0000000000000897

Valero Haro, A., Noroozi, O., Biemans, H. J. A., Mulder, M., & Banihashem, S. K. (2023). How does the type of online peer feedback influence feedback quality, argumentative essay writing quality, and domain-specific learning? *Interactive Learning Environments*, 1–20. https://doi.org/10.1080/10494820.2023.2215822

Van Blankenstein, F. M., O'Sullivan, J. F., Saab, N., & Steendijk, P. (2021). The effect of peer modelling and discussing modelled feedback principles on medical students' feedback skills: A quasi-experimental study. *BMC Medical Education*, *21*(1), 332. https://doi.org/10.1186/s12909-021-02755-z

Van den Berg, I., Admiraal, W., & Pilot, A. (2006). Designing student peer assessment in higher education: Analysis of written and oral peer feedback. *Teaching in Higher Education*, *11*(2), 135–147. https://doi.org/10.1080/13562510500527685

Voet, M., Gielen, M., Boelens, R., & De Wever, B. (2018). Using feedback requests to actively involve assessees in peer assessment: Effects on the assessor's feedback content and assessee's agreement with feedback. *European Journal of Psychology of Education*, *33*(1), 145–164. https://doi.org/10.1007/s10212-017-0345-x

Williams, J. D., & Takaku, S. (2011). Help seeking and writing performance among college students: A longitudinal study. *Journal of Writing Research*, *3*(1), 1–18. https://doi.org/10.17239/jowr-2011.03.01.1

Winstone, N. E., Nash, R. A., Parker, M., & Rowntree, J. (2017). Supporting learners' agentic engagement with feedback: A systematic review and a taxonomy of recipience processes. *Educational Psychologist*, *52*(1), 17–37. https://doi.org/10.1080/00461520.2016.1207538

Zhang, F., Schunn, C. D., & Baikadi, A. (2017). Charting the routes to revision: An interplay of writing goals, peer comments, and self-reflections from peer reviews. *Instructional Science*, *45*(5), 679–707. https://doi.org/10.1007/s11251-017-9420-6

Zhu, W. (1995). Effects of training for peer response on students' comments and interaction. *Written Communication*, *12*(4), 492–528. https://doi.org/10.1177/0741088395012004004

Zhu, Q., & Carless, D. (2018). Dialogue within peer feedback processes: Clarification and negotiation of meaning. *Higher Education Research & Development*, *37*(4), 883–897. https://doi.org/10.1080/07294360.2018.1446417