

TYPES OF PEER FEEDBACK TRAINING, THE FEEDBACK PROVIDER, AND PERFORMANCE: TOWARD A PROCESS/PRODUCT PERSPECTIVE

Stephanie Leow | Georgetown University

Used in a variety of higher education contexts, writing peer feedback has been shown to benefit students. However, many previous studies have not focused on training students to give feedback, and an exploration of different fields of peer feedback scholarship is lacking. This novel study compared two methods of training for written peer feedback, one based on the scholarship of peer revision and the other based on writing center peer tutoring. A mixed-methods pre-essay to post-essay procedure was employed to identify the benefits of receiving training and providing feedback on the feedback provider's writing performance and process. Concurrent think-aloud protocols and post-interviews were used to triangulate data on writing processes. Results show that neither peer feedback training significantly improved the participants' writing performance. However, both types of training led to perceived improvements in writing and self-revision processes, with Peer Revision participants reporting awareness of style and Peer Tutoring participants reporting awareness of argument and structure. Both groups also reported experiencing increased awareness of audience/reader perspective. This study exhibits that mixed-methodological approaches expand ways of studying learning through both the writing process and the writing product.

INTRODUCTION

Writing peer feedback (also known as peer review, peer revision, peer evaluation, or peer response) is used in a variety of higher education contexts: as an instructional method in the classroom, between a tutor and tutee in a writing center, or even among roommates in a dorm. As a supplement to feedback from instructors, peer feedback promotes collaboration. Each student

engages in two roles when providing and receiving feedback: the writer and the reviewer (Cho and MacArthur).

Previous studies have highlighted the benefits of peer feedback (Astrid et al.; Mangelsdorf; Settiawan); however, previous research has revealed that writers tend not to incorporate peer feedback into their work, likely due to students' ineffective and vague feedback (Mangelsdorf and Schlumberger; Tsui and Ng; Yu et al.). Consequently, in both first (L1) and

second/foreign (L2) language fields, studies have shifted their focus to peer feedback training (Chen; Hanjani; Min “Training Students”; Zhu). These studies center on the quality of feedback and the recipient’s subsequent performance but do not consider how feedback training may affect the writing performance of the students providing feedback. In addition, previous studies have focused on the product of such feedback and not on the process, namely, how students may process peer feedback lessons while writing.

THEORETICAL BACKGROUND

Theoretical insights into how writers revise their work can explain the skills and processes being practiced during peer revision. According to Linda Flower and colleagues, the review process includes two main components: evaluation and revision. Evaluation refers to the ability to read for comprehension and determine if the text meets certain criteria, and revision refers to the act of either rewriting a section of text or changing it to meet the criteria. The revising model can be further broken down into detecting problems in texts, diagnosing those problems, and selecting a strategy to resolve them. However, not every writer has the capacity to execute these steps successfully. Two underlying key variables, knowledge and intention, affect the expert performance of revision. A writer must first possess knowledge, which is defined as an understanding of diagnostic problem representation and the strategies to resolve those problems. That knowledge must then be applied to a text with intention, which is the ability to activate knowledge, for

the writer to meet their goal, such as choosing the best revision strategy.

The outcome of this revision model differed based on the expertise of the writer. Expert writers were able to diagnose 74% of their detected problems, while inexperienced writers could diagnose only 41% (Hayes et al.). Additionally, novice writers were more likely to make surface-level revisions than revisions that alter meaning. As seen from other studies, many students have trouble detecting, diagnosing, and resolving problems in their own work, but they are more likely to be able to detect problems in a peer’s work (Bartlett; Cho and Cho). Peer review, especially with the addition of training, permits the reviewer to learn and engage with the elements of revision using another writer’s work before their own. This process facilitates the reviewer’s ability to evaluate texts and find solutions to problems, which contributes to building “active usable knowledge” to apply to their own writing (Flower et al. 19).

EMPIRICAL STUDIES ON PEER FEEDBACK

Previous studies on peer feedback have made direct comparisons between the benefits of giving and receiving feedback. Kristi Lundstrom and Wendy Baker found that givers of feedback improved more on their writing than receivers over the course of a semester, especially at the beginner level of L2 writing. Bart Huisman and colleagues, however, found that providing and receiving feedback led to similar improvements from a first draft to a final draft in L1 writing performance. The discrepancy

between their results could be attributed to different contexts in terms of L1 vs. L2 learning and the training interventions. The participants in Lundstrom and Baker's study gave and received feedback using the same sample essays, whereas the participants in Huisman et al.'s study gave and received feedback for an authentic graded writing assignment. The sample essays allowed Lundstrom and Baker to control for differences in the participants' writing, but, as Huisman and colleagues point out, might have diminished the "receiving" group's perceived relevance to their own writing.

A few studies have found benefits of providing peer feedback, both in terms of performance and students' perceptions of their improvement. The results of Kwangsu Cho and Charles MacArthur support the learning-by-review hypothesis since students who reviewed three example papers (reviewing condition) significantly outperformed students who only read the example papers (reading condition) and students who read papers with topics unrelated to the subsequent writing assignment (control condition). This study employed rubric-based training and highlighted essay performance instead of writing processes.

In contrast, other studies investigated students' attitudes towards giving and receiving peer feedback, specifically their perceptions of learning benefits and their writing processes. David Nicol and colleagues found that peer feedback had a positive effect on students ($n = 64$): 55% reported that giving and receiving feedback helped them learn, 27% reported that only receiving helped them learn, and 11% reported that only giving helped them learn.

Even though this study intended to analyze the learning processes of participants, qualitative data was collected in the forms of post-surveys and post-interviews of focus groups, relying on recall rather than concurrent data elicitation. Additionally, a lack of a peer feedback training intervention may account for the lower percentages of students who learned from giving compared to receiving.

RATIONALE FOR PRESENT STUDY

The present study intended to fill numerous gaps in the peer feedback research. First, the present study emphasizes the importance of training students to give peer feedback. In addition, a comparison of traditional "peer revision" training versus a type of training atypical to written feedback, such as writing center training, is warranted. Writing center peer tutoring scholarship was considered for this study due to its emphasis on the feedback giver acting as a stand-in audience, its prioritization of global issues, and additional theory and strategies described in the section "Design of Independent Variable." These elements are central to tutoring given its face-to-face nature and limited time frame (Bickford; Fitzgerald and Ianetta). Audience perspective (Traxler and Gernsbacher) and a focus on global issues (Lundstrom and Baker) have proven to be central to written peer feedback, so exploring this field's potential advantages may be valuable for cultivating effective training methods.

The limited previous research on peer feedback givers has concentrated on either performance (measured quantitatively) or students' perceptions of learning (measured

qualitatively). However, many studies did not focus on how giving feedback may affect a student's writing process, and if they did focus on processes (Nicol et al.), the data was not concurrent, and students described modifications to an essay they had already drafted. This design does not consider that self-evaluations and self-revisions may occur at any stage of the writing process, not only after a full draft has been written. Additionally, the number of "well-controlled, quantitative studies" in peer feedback research is lacking, according to a meta-analysis of the field by Huisman and colleagues. To address both issues, the present study adopted a mixed-methods approach: a statistical analysis of the change in scores from a pre-essay to post-essay instead of a rough-draft to final-draft procedure, in addition to think-aloud protocols and post-interviews.

The current study, then, aimed to identify the benefits of receiving training and providing feedback on the feedback provider's own writing performance and writing process. It employed an empirical design that compared peer revision training with peer tutoring training. Both areas of scholarship were applied to two different online training sessions for written peer feedback.

Two primary research questions guided the present study:

1. How do types of peer feedback training (revision vs. tutoring) affect the overall writing performance of the feedback provider?
2. How do types of peer feedback training (revision vs. tutoring) affect the writing processes of the feedback provider?

METHODOLOGY

PARTICIPANTS

Participants were 22 undergraduate students enrolled in higher-education institutions. All participants signed a consent form (IRB approved) and completed every stage of the study. Participation in the study was voluntary and conducted separately from the participants' coursework. Four participants (18%) were rising second-year students, 16 (73%) were rising third-years, and two (9%) were rising fourth-years. Of these 22 participants, 11 (50%) were male and 11 (50%) were female. All participants considered English their strongest language, and the mean of their self-rated writing ability out of 10 was seven ($SD = 1.60$).

DESIGN OF INDEPENDENT VARIABLE (TYPE OF TRAINING): PEER REVISION TRAINING VS. PEER TUTORING TRAINING

Training Procedure. The Peer Revision Group and Peer Tutoring Group went through the same procedure during their respective online training sessions. Participants first watched a video in which they were taught how to give feedback. While watching the video, they paused at certain points to practice giving feedback to the video's writing samples on an assessment form. The instructor in the video then demonstrated how she would provide feedback. The participants submitted their forms at the end.

Immediately after, participants watched an observation video, which consisted of an experienced tutor and revisor providing written

peer feedback on an essay in the same genre as the participants' pre- and post-essays. The experienced tutor and revisor used each training's corresponding method of feedback. Participants then received a document with a guideline and main takeaways from the training. The Peer Revision guideline was modified from Min's "The Effects of Trained Peer Review on EFL Students' Revision Types and Writing Quality," and the researcher composed the Peer Tutoring guideline. Finally, participants provided written peer feedback to an essay in the same genre as the experiment's pre- and post-essays. The video portions of both trainings lasted approximately 45 minutes. Participants spent between an hour to an hour and a half completing the training, including practicing and providing feedback.

Peer Revision Training vs. Peer Tutoring Training. The Peer Revision training was based on five elements of feedback: (1) clarifying writers' intentions, (2) identifying the source of problems, (3) explaining the nature of problems, (4) evaluating the problems, and (5) making specific suggestions ("Giving Helpful Feedback"; Min, "The Effects"), along with advice from Straub's "Responding-Really Responding-to Other Students' Writing." The Peer Tutoring training was designed using strategies adapted from Fitzgerald and Ianetta's writing center training handbook and Bickford's dissertation on tutor training pedagogy from writing center training texts. These strategies include scaffolding, finding patterns of error, prioritizing higher-order issues, and point-predicting. Additionally, the training's content was derived from ten reflections written by writing

center tutors at the researcher's institution, which explained their tutoring methods, such as reverse outlining and articulating meta-discourse. While the two trainings had overlapping content, Peer Revision centered on specific steps to giving peer feedback paragraph by paragraph, whereas Peer Tutoring centered on broader strategies to examine writing pieces holistically.

Writing Materials. Participants were instructed to write two op-eds, an essay that expresses the opinion of an author, for submission to their university's newspaper. Even though Prompt A differed from Prompt B, both related to university academic policies that affect all students. Both prompts were supplemented with a model op-ed on a related academic policy written for the same audience and with two informative sources on the prompt's topic. The instructions discouraged outside research aside from the provided sources to control for differences in research methods.

PROCEDURE

Participants were emailed a pre-experiment questionnaire that gathered general demographic background. Participants were randomly assigned to either the Peer Revision Group or the Peer Tutoring Group. Half of the participants of each experimental group received Prompt A first and the other half received Prompt B first, in order to minimize the potential effects of the order of prompts on the results.

After scheduling a pre-essay session, participants received their first prompt and the

procedure on how to think-aloud 10 minutes prior to the session. At the beginning of the session, they practiced thinking-aloud while completing a math problem. They were then instructed to type a two-page, double-spaced essay at their own pace based on the prompt while thinking-aloud. Their think-alouds were recorded through Zoom.

Within the next week, each participant went through a training session for their respective training group, then provided written feedback to a sample op-ed, which was written for an authentic writing assignment in a first-year composition class. Within a week of the training, participants wrote the post-essay for the prompt that they did not receive for the pre-essay. The guidelines, think-aloud procedure, and recording method were the same as the pre-essay. After their post-essays, they were interviewed about their experiences in the study and their perceptions of their writing processes.

SCORING AND ANALYSIS

The pre- and post-essays were scored by two writing faculty members on a scale of 1 (lowest) to 10 (highest). The essays were graded on three criteria: argument, structure, and style, and the overall score was averaged from the three criteria scores. Then, the two scores from the two professors were averaged to get the scores reported below. The scorers used the same rubric (see appendix A) and were not aware of who authored the op-eds or which essays were pre- and post-essays, since all 44 essays were presented in a random order.

The interviews were coded for affirmative and negative responses to polar questions regarding the participants' experiences with peer feedback. The interviews provided insight into the participants' self-perceptions of changes in their writing processes due to the training. The interview questions can be found in appendix B.

The think-alouds were coded for self-evaluations and self-revisions, the two main steps of the review process (Flower et al.). Only the participants' self-feedback concerning higher-order concerns (HOC)¹ were coded, rather than lower-order concerns (LOC)². This distinction was made because self-revisions of LOCs such as word choice, spelling, and punctuation were common throughout all of the think-alouds, and these prescriptive language rules were not relevant to how the participants were taught to give feedback in the two training sessions. The think-alouds were coded by the author, then another experienced researcher coded four of the think-alouds (10%). Inter-coder agreement was 95%. The think-alouds were analyzed to measure participants' "active usable knowledge" necessary for self-revisions (Flower et al. 19). The think-alouds were also coded for references to audience perspective, another

1. "Central to the meaning and communication of the piece ... matters of thesis and focus, development, structure and organization, and voice" as well as awareness of patterns of personal writing concerns (McAndrew and Reigstad 42).

2. "Matters related to surface appearances, correctness, and standard rules of written English" (McAndrew and Reigstad 56).

potential benefit of providing peer feedback (Cho and MacArthur).

To address Research Question 1, the raw scores obtained on the pre-essays and the post-essays were submitted to a 2 x 2 repeated-measures two-way ANOVA, in which Type of peer feedback (revision vs. tutoring) was entered as the between-subjects factor while Time (pre-test vs. post-test) was entered as the within-subjects factor. The ANOVA test thus measured if the difference between the pre-essay and post-essay scores held statistical significance based on the independent variables (the types of peer feedback training) and the two time points of essay writing. To address Research Question 2, the coded interviews and think-alouds were quantified as proportions.

RESULTS AND DISCUSSION

EFFECTS OF TYPE OF PEER FEEDBACK TRAINING ON WRITING PERFORMANCE

Research Question 1 addressed whether Type of peer feedback training (revision vs. tutoring) affected the writing performance of the feedback provider. Statistical analysis revealed no significant main effect for type of peer feedback Training ($F = 0.06, p = .815$) or Time ($F = 0.02, p = .91$) and no significant interaction ($F = 2.08, p = .165$) (see table 2). In other words, both experimental groups performed similarly from pre-essay to post-essay, and neither group improved significantly overall. Similar non-significant results ($p > .05$) were found for the rubric subsets (argument, structure, and style) (see table 1).

Although no significant difference was found, the Peer Revision Group showed a slight improvement, while the Peer Tutoring Group showed a slight decrease in overall scores. This difference was likely due to the small sample size, in which one or two scores drastically impacted the overall group performances. In particular, one participant in the Peer Revision Group had an exceptional increase in their score (pre-essay 6.08/10, post-essay 9.67/10, overall increase of 3.58). In contrast, one participant in the Peer Tutoring Group had a large decrease in their score (pre-essay 9.50/10, post-essay 7.00/10, overall decrease of 2.50). Since neither group scored significantly better or worse in the post-essay, these scores do not impact the overall results, but individual differences due to the small number of participants should be taken into account nonetheless.

The lack of improvement in performance in this study differs from previous studies. In Huisman and colleague's work and in Lundstrom and Baker's study, the experimental procedures were incorporated into courses using authentic writing assignments. Even though authentic graded writing assignments provide students with the motivation to work for a grade and represent real classroom dynamics, factors other than peer feedback could have contributed to the gains in writing ability in these quasi-experimental studies. The present study, on the other hand, was conducted when students were not receiving outside English writing instruction. In turn, the lack of an authentic writing assignment in the present study could have affected the participants' motivation to write to the best of their ability. The

Table 1
Pre- and Post-essay Performances by Training Group

Training Group	Rubric Criterion	Pre-Essay		Post-Essay		Performance Change		P-Value
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
Tutoring (N = 11)	Total	7.37	1.32	7	1.23	-0.37	1.09	0.14
	Argument	7.68	1.28	7.34	1.3	-0.36	0.94	0.11
	Structure	7.34	1.32	7.04	1.21	-0.29	1.34	0.24
	Style	7.09	1.48	6.64	1.32	-0.45	1.2	0.12
Revision (N = 11)	Total	7.09	1.19	7.53	1.23	0.44	1.51	0.17
	Argument	7.2	1.35	7.77	1.3	0.57	1.48	0.12
	Structure	7.06	1.17	7.59	1.21	0.52	1.69	0.16
	Style	7	1.19	7.23	1.32	0.22	1.58	0.32
Total Group (N = 22)	Total	7.23	1.23	7.26	1.52	0.03	1.35	0.45
	Argument	7.44	1.31	7.55	1.61	0.1	1.3	0.36
	Structure	7.2	1.22	7.31	1.58	0.11	1.55	0.37
	Style	7.05	1.31	6.93	1.48	-0.11	1.42	0.36

Table 2
ANOVA for Type of Peer Feedback Training by Time

Source	Sum-of-Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F Ratio	Sig. (p)	Observed Power
Group (G)	0.172	1	0.172	0.056	0.815	0.056
Time (T)	0.013	1	0.013	0.015	0.905	0.52
T x C	1.807	1	1.807	2.076	0.165	0.279

researcher attempted to incentivize effort by entering all of the participants' essays into a writing contest with three prizes, but that incentive may not replicate the same motive as a class grade.

The present study attempted to look at learner gains, but participants in both experimental groups scored relatively high on their pre-essays ($M = 7.23$), leaving little room for improvement. A larger sample size or a more difficult task may have presented participants with more of an opportunity to learn from the two trainings and improve their writing.

EFFECTS OF PEER FEEDBACK TRAINING ON WRITING PROCESSES AND AWARENESS OF WRITING PROCESSES

Even though participants did not improve their writing performance, their concurrent and retrospective reports (think-alouds and post-interviews) provide invaluable insights into how peer feedback training may affect writing processes. While the think-alouds revealed the participants' composing processes, aligning this concurrent data with the interviews allowed for a richer and more precise analysis of how exactly their composing processes changed, along with whether participants perceived this change as an improvement (Abdel Latif). Beyond the examples analyzed in this discussion, additional think-aloud and interview data can be found in Appendix C.

Retrospective verbal reports were collected to determine the participants' perceptions of the effects of the peer feedback trainings. The participants were asked about their typical

writing experiences and processes and then were asked to compare their writing processes employed between the pre-essay and the post-essay. When asked, "Did the training change anything about your writing process in Essay 2?," 20/22 participants (90.90%) responded that the training did affect their writing process. The two participants who did not perceive any effects from the training explained that they did not recognize the application of peer-feedback to self-feedback. The participants elaborated on how their writing processes changed, and those responses were coded as changes in argument, structure, style, and audience perspective.

The difference between these groups, particularly Peer Tutoring's low percentage of responses for style (0%) and the gap between the groups' argument and structure (Peer Tutoring 60% and 70%; Peer Revision 20% and 30%, respectively) could be explained by the foci of the two types of trainings. The Peer Tutoring Training made an explicit distinction between HOCs and LOCs, included strategies particular to structure (reverse outlining), and had an emphasis on a macro-analysis of holistic pieces of writing. All of these qualities apply more to HOCs of argument and structure. However, the Peer Tutoring Training may have de-emphasized focusing on a writer's style while giving feedback, attributing many elements of writing style to LOCs. The Peer Revision Training, on the other hand, dedicated a section to style and did not emphasize a hierarchy of peer feedback concerns. The proportions of the interview responses ultimately align with the content of each type of training.

Table 3
 Distribution of Affirmative Responses to “Did the Training Change Anything about Your Writing Process in Essay 2?” by Training

Training Group	Aspect of Writing Affected	Number (Percentage) of Participants' Responses
Tutoring (N = 10)	Argument	6 (60%)
	Structure	7 (70%)
	Style	0 (0%)
	Audience Perspective	5 (50%)
Revision (N = 10)	Argument	2 (20%)
	Structure	3 (30%)
	Style	5 (50%)
	Audience Perspective	7 (70%)
Total Group (N = 20)	Argument	8 (40%)
	Structure	10 (50%)
	Style	5 (25%)
	Audience Perspective	11 (55%)

Providing peer feedback allows students to practice detecting problems in a text, diagnosing problems, and selecting a strategy to improve problems (Flower et al.). Both trainings highlighted issues of writing in terms of argument, structure, and style. Even without the interviewer naming these elements, the large majority of participants (20/22) explained that

the training helped them build awareness in at least one of these elements for their own writing process, particularly for argument and structure. The following example from Participant 17 shows how the post-essay think-alouds reflect the changes that the participant highlighted in her interview:

Interview: I found myself at times like I would notice I was making, like, really generalized statements for some of them. And then I was like, oh, that doesn't make sense. You have to have the evidence. I remember that from like the [observation] video, was in my mind. So I went and corrected that to make things as concise as possible.

Post-Essay Think-Aloud: What am I saying, what? Um, I think I need to work on that sentence a little tiny bit. "Despite encouragement from the school to participate in international experience." Maybe we can expand upon that a little bit.

This participant remembered from the observation video in the peer feedback training that writers should connect "generalized statements" to evidence in order to have a strong argument and concise writing. In her post-essay think-aloud, she points out broad statements in her essay and makes an evaluation of them. In the think-aloud, she recalibrates her writing by questioning, "what am I saying?," then comes up with a revision to expand on her point. The observation video thus provided a model for how to identify and revise broad claims with specific evidence, which she could apply to her own writing.

Participant 4 similarly became more aware of areas of revision, particularly concerning his essay's organization:

Interview: So in Essay 2, I think the main difference is I became more aware of what is like necessary for op-ed writing and for just good writing in general, like making things cohesive and having a logical flow, lots of the things that we like used in the training session because I felt like I should since I went to that training session. Um, and it was more so of I think making something flow better rather than a change in the writing process because I still just like wrote a bunch, but then I think I connected them better.

Post-Essay Think-Aloud: I had this sentence where I talked about—I felt like two of my paragraphs were disjointed. So when I was talking about...and then immediately after I just jumped into the advantages of AP's are uncertain. But I didn't address it all that um [universities] should do away with the credit. So I just add a sentence about that like right after or in between.

Post-Essay Think-Aloud: Oh I might just move, because it is a different idea of how skipping classes through credits makes you unable to explore different fields, and, that—make that a completely different section, just like completely move it.

Participant 4 identified the main improvements in his writing as cohesion and flow—basically his ability to connect ideas. In his think-alouds, he explains changes he makes to his structure both within and among paragraphs. In the first think-aloud example, he evaluates the relationship between two of his paragraphs as “disjointed,” then revises the issue by adding a transition sentence between the two paragraphs, which also connects back to his thesis. The second example reveals that he moved a section of one paragraph to make “a completely different section,” which is a revision of the essay’s structure. As Participant 4 described, he transferred lessons from the training session to revise for a more cohesive argument.

However, the present study sought to investigate how peer feedback training may affect participants’ writing processes, which may extend beyond the revision stage. The think-aloud data revealed that more participants in the Peer Revision Group made self-evaluations or self-revisions during the post-essay. However, the interview data, which was coded for any changes in writing processes, suggested that the Peer Tutoring Training affected how participants approached their writing, rather than just how they revised their writing. Participants described changes that affected their pre-writing stage (brainstorming and outlining), writing stage, and even the addition of a revision stage that was not typical of their previous writing processes. This distinction likely occurred because the Peer Revision Training centered on a step-by-step process for revision, while the Peer Tutoring Training presented broader strategies (e.g., scaffolding and reverse

outlining) that could be applied to multiple stages of the writing process. The Peer Tutoring Training also described ways to holistically view a peer’s writing, which may have influenced how someone brainstorms or writes more than the Peer Revision instruction that focused on isolated issues. Specifically, participants in the Peer Tutoring Group employed the common revision strategy of reverse outlining in their post-essays, as demonstrated by Participant 21:

P21 [PEER TUTORING]

I thought more about the structure of what I was writing as I was writing it because I wasn’t using an outline, that might have also been part of it. But I was definitely more aware, like at the end, I like reverse outlined in my head. I didn’t want to add a bunch of comments to the document; I felt like that wasn’t gonna be helpful for you, but I did in my head go like this paragraph does not make sense here because that’s not what that paragraph is supposed to be about logically.

However, some participants in the Peer Revision also changed their writing process, although less frequently than the Peer Tutoring Group. The following interview quote represents Participant 7’s change in his writing processes:

P7 [PEER REVISION]

But with this one I felt like I really got better really because like I actually took my time actually breaking it down and coming up with like reasons of why, of what to write about the prompt, and this time it made it so much easier for me to like brainstorm really, 'cause I knew exactly what I was going to write, so as it came for each paragraph, I knew what to write and I knew how to break it out, how to talk about it, like what not to do and what to do really.

Participant 7 added a more intensive brainstorming phase than he previously enacted in his pre-essay. This brainstorming process helped him break down his argument and, according to him, discuss the topic more effectively. Indeed, in the pre-essay session, Participant 7 began writing the essay immediately after coming up with an argumentative position, and his final pre-essay consisted of one long paragraph. His post-essay consisted of multiple paragraphs, which perhaps reflects his new brainstorming process that helped him organize his ideas. The peer feedback trainings not only helped many participants improve their revision processes, but also raised their awareness of the different steps of the writing process more generally.

Furthermore, for both groups together, 55% of the affirmative-responding participants indicated that they were able to have more of an audience or reader perspective when scrutinizing their work. This perceived shift in perspective mirrors the conclusions of previous

studies, such as that of Cho and MacArthur. Providing peer feedback puts students in the position to detect, diagnose, and provide solutions to someone else, which then causes them to consider how an outside perspective may evaluate their writing. Many participants who acknowledged more audience awareness in their interviews also used this strategy during their writing processes in the post-essay, exemplified by Participant 19 below:

P19 [PEER REVISION]

Interview: I was thinking about what we watched in the videos, so like...is it unclear even what my main point is too far into the piece? Yeah, just really being like, does this point even make sense? I think generally I would write a rough draft or I write an outline and then it would be like, in my mind this makes sense, and I assume that people know. But then after doing that edit and being like “unclear unclear unclear” for the draft that you sent, I was like, that can't be me. I was thinking, as I was going through, I was like, okay, let me not just guess that people are going to assume what they are—let me not assume that people will take away what I hope they will and just make it very clear.

Post-Essay Think-Aloud: I'm looking back and reading, so I know, I want this to flow well, so I would not have had “with people in my day to day life” because I just kind of assume that the

reader would know what I'm talking about, but if I need to make that a complete statement or sentence. I want to say that although the US has a lot of...Nope, this is my counter. That's what I wanted to say. Oh, huge. I want this to be clear, so I can show that the students, or the purpose of the students taking foreign language classes.

In her interview, Participant 19 said that clarity was the primary lesson she took away from the training. She describes how she remembered both the observation video and the essay draft that she provided feedback to while writing her post-essay. Once she provided feedback about clarity to another essay, she realized that her writing may also consist of misalignments between her intention for meaning and the meaning understood by a reader. She reflected her understanding of audience in her post-essay think-aloud, as she acknowledged her tendency to “just kind of assume that the reader would know what I'm talking about.” Due to her increased awareness of audience, she was able to rework a part of her writing that would potentially be unclear. Participant 19, along with many other participants, demonstrated the ability to reflect on audience perspective in their post-essays.

When looking at the qualitative and quantitative data together, there seems to be a disjunction between the participants' perceived improvements to their writing processes and their actual writing performances. This discrepancy could be interpreted using the two underlying variables of expert peer revision: knowledge (the possession of an understanding

of identifying, diagnosing, and resolving problems) and intention (the ability to apply this knowledge to meet a writer's goal) (Flower et al.). It is possible that the intentions and goals of the writer differed from those of the instructor, or in this case, the scorers. The qualitative data portrays an increase of knowledge in the vast majority of participants, but, in general, the essay scores suggest that the participants may not have gained expertise in revision intention, at least not for the same intention as the scorers in this study's task. Since knowledge is the initial step for expert self-revision, the gains in knowledge may have a more successful application to writing quality with more practice in peer- and self-revision. Students in authentic classroom settings would also receive peer and instructor feedback, which may further fortify students' connections between knowledge and intention.

CONCLUSION

The results show that neither peer feedback training significantly altered the participants' writing performance. However, both types of training caused self-perceived improvements in writing and self-revision processes. Both groups also reported experiencing an increase in awareness of audience/reader perspective. The types of training had distinct impacts on the participants' perceived improvements, so future trainings could incorporate elements from both Peer Revision and Peer Tutoring, with the steps and structure of Peer Revision supplemented by strategies characteristic of Peer Tutoring.

The present study has several limitations that should be noted. The sample size was relatively small for a statistical analysis, and the voluntary nature of this study reduced the amount of time and number of experimental sessions that were plausible to attract participants. Ideally, participants would have had multiple exposures to peer feedback training and more practice with providing feedback. The experimental procedure was also confined to 2-3 weeks, which is a short amount of time to make significant progress in writing quality, even with an experimental manipulation. Individual differences also play a large role in writing processes, writing performance, and thinking-aloud, so prior knowledge, motivation, and retention of the training could have all affected the results.

Future studies should have larger sample sizes, employ a curricular approach by utilizing authentic writing assignments, and reinforce peer feedback training and practice through more than one training session. Future studies should continue to investigate the effects of peer feedback on writing processes in more depth, using both concurrent and retrospective procedures to determine *how* students apply peer feedback strategies to self-feedback. These types of qualitative data provide more insights into the ways that students interact with peer feedback and writing tasks, instead of only relying on their final scores as indicators of success. Finally, different fields of writing feedback studies, such as writing center studies, should be further explored to identify potential tools for the classroom.

WORKS CITED

- Abdel Latif, Muhammad M. M. "Using Think-Aloud Protocols and Interviews in Investigating Writers' Composing Processes: Combining Concurrent and Retrospective Data." *International Journal of Research & Method in Education*, vol. 42, no. 2, 2019, pp. 111–123, <https://doi.org/10.1080/1743727X.2018.1439003>
- Astrid, Annisa, et al. "Experiencing the Peer Feedback Activities with Teacher's Intervention through Face-to-Face and Asynchronous Online Interaction: The Impact on Students' Writing Development and Perceptions." *Journal of Language and Education*, vol. 7, no. 2, 2021, pp. 64–77, <https://doi.org/10.17323/jle.2021.10585>
- Bartlett, Elsa Jaffe. *Learning to Write: Some Cognitive and Linguistic Components*. Center for Applied Linguistics, 1981.
- Bickford, Crystal. *Examining Writing Center Training Texts: Towards a Tutor Training Pedagogy*. 2006. Indiana University of Pennsylvania, PhD Dissertation.
- Chen, Jiali. "Research on the Effect of Peer Feedback Training in English Writing Teaching—A Case Study of Students in Business English Major." *English Language Teaching*, vol. 14, no. 6, 2021, pp. 12–24, <http://doi.org/10.5539/elt.v14n6p12>
- Cho, Young Hoan, and Kwangsu Cho. "Peer Reviewers Learn from Giving Comments." *Instructional Science*, vol. 39, no. 5, 2011, pp. 629–643, <https://www.jstor.org/stable/23882823>

- Cho, Kwangsu, and Charles MacArthur. "Learning by Reviewing." *Journal of Educational Psychology*, vol. 103, no. 1, 2011, pp. 73–84, <https://doi.org/10.1037/a0021950>
- Fitzgerald, Lauren, and Melissa Ianetta. *The Oxford Guide for Writing Tutors*. Oxford UP, 2015.
- Flower, Linda, et al. "Detection, Diagnosis, and the Strategies of Revision." *College Composition and Communication*, vol. 37, no. 1, 1986, pp. 16–55, <https://doi.org/10.2307/357381>
- "Giving Helpful Feedback." *Eli Review*, <https://elireview.com/learn/tutorials/students/giving-helpful-feedback/>. Accessed 25 July 2020.
- Hanjani, Alireza Memari. "Insights into the Cognitive Processes of Trained vs Untrained EFL Peer Reviewers on Writing: An Exploratory Study." *Assessing Writing*, vol. 49, 2021, pp. 1–15, <https://doi.org/10.1016/j.asw.2021.100530>
- Hayes, John, et al. "Reading, Writing, and Language Processing." *Advances in Applied Psycholinguistics*, edited by Sheldon Rosenberg, Cambridge UP, 1987, pp. 176–240.
- Huisman, Bart, et al. "Peer Feedback on Academic Writing: Undergraduate Students' Peer Feedback Role, Peer Feedback Perceptions and Essay Performance." *Assessment and Evaluation in Higher Education*, vol. 43, no. 6, 2018, pp. 955–968, <https://doi.org/10.1080/02602938.2018.1424318>
- Lundstrom, Kristi, and Wendy Baker. "To Give Is Better than to Receive: The Benefits of Peer Review to the Reviewer's Own Writing." *Journal of Second Language Writing*, vol. 18, no. 1, 2009, pp. 30–43, <https://doi.org/10.1016/j.jslw.2008.06.002>
- Mangelsdorf, Kate. "Peer Reviews in the ESL Composition Classroom: What Do the Students Think?" *ELT Journal*, vol. 46, no. 3, 1992, pp. 274–285, <https://doi.org/10.1093/elt/46.3.274>
- Mangelsdorf, Kate, and Ann Schlumberger. "ESL Student Response Stances in a Peer-Review Task." *Journal of Second Language Writing*, vol. 1, no. 3, 1992, pp. 235–254, [https://doi.org/10.1016/1060-3743\(92\)90005-A](https://doi.org/10.1016/1060-3743(92)90005-A)
- McAndrew, Don, and Tom Reigstad. *Tutoring Writing: A Practical Guide for Conferences*. Boynton/Cook Publishers, 2001.
- Min, Hui-Tzu. "Training Students to Become Successful Peer Reviewers." *System*, vol. 33, no. 2, 2005, pp. 293–308, <https://doi.org/10.1016/j.system.2004.11.003>
- . "The Effects of Trained Peer Review on EFL Students' Revision Types and Writing Quality." *Journal of Second Language Writing*, vol. 15, no. 2, 2006, pp. 118–141, <https://doi.org/10.1016/j.jslw.2006.01.003>
- Nicol, David, et al. "Rethinking Feedback Practices in Higher Education: A Peer Review Perspective." *Assessment and Evaluation in Higher Education*, vol. 39, no. 1, 2014, pp. 102–122, <https://doi.org/10.1080/02602938.2013.795518>
- Settiawan, Dodi. "EFL Students' Perception on Online Peer Feedback in Improving Their Academic English Writing Ability." *English Instruction*, vol. 5, no. 1, 2021, pp. 42–54, <http://journals.nalarglobal.org/index.php/ei/article/view/186>
- Straub, Richard. "Responding-Really Responding-to Other Students' Writing." *The Subject is Writing*, edited by Wendy Bishop, Boynton/Cook Publishers, 1999, pp. 136–146.
- Traxler, Matthew J., and Morton Ann Gernsbacher. "Improving Written Communication through Perspective-Taking." *Language and Cognitive Processes*, vol. 8, no. 3, 1993, pp. 311–334, <http://doi.org/10.1080/01690969308406958>

- Tsui, Amy, and Maria Ng. "Do Secondary L2 Writers Benefit from Peer Comments?" *Journal of Second Language Writing*, vol. 9, no. 2, 2000, pp. 147–170, [https://doi.org/10.1016/S1060-3743\(00\)00022-9](https://doi.org/10.1016/S1060-3743(00)00022-9)
- Yu, Shulin, et al. "What Works May Hurt: The Negative Side of Feedback in Second Language Writing." *Journal of Second Language Writing*, vol. 54, 2021, pp. 1060–3743, <https://doi.org/10.1016/j.jslw.2021.100850>
- Zhu, Wei. "Effects of Training for Peer Response on Students' Comments and Interaction." *Written Communication*, vol. 12, no. 4, 1995, pp. 492–528, <https://doi.org/10.1177/0741088395012004004>

APPENDIX A

SCORING RUBRIC

	Argument	Structure	Style/Mechanics
5	<ul style="list-style-type: none"> - Responds excellently to prompt - Thesis presents a clear, compelling, and focused argument - Evidence is strong and relevant - Evidence is paired with strong analysis - Evidence consistently supports central argument 	<ul style="list-style-type: none"> - Paper flows to present a cohesive argument - Paragraphs build to guide the reader through argument - Transitional sentences are used effectively to develop relationships between ideas 	<ul style="list-style-type: none"> - Paper fits the style and audience of an op-ed - Paper uses a convincing, unique voice throughout - Word choice is precise - Sentence structures are varied - Free of grammar, spelling, and punctuation mistakes
4	<ul style="list-style-type: none"> - Responds appropriately to prompt - Thesis presents a good argument, but could use refining - Evidence is relevant and somewhat strong - Evidence is paired with good analysis, though it could use improvements - Evidence usually supports central argument 	<ul style="list-style-type: none"> - Paper generally presents a cohesive argument - Paragraphs are ordered thoughtfully and relate to argument - Transitional sentences are used well to create a logical argument 	<ul style="list-style-type: none"> - Paper mostly fits the style and audience of an op-ed - Paper uses a clear voice throughout - Word choice is mostly effective - Sentence structures are mostly varied - Mostly free of grammar, spelling, and punctuation mistakes
3	<ul style="list-style-type: none"> - Responds decently to prompt - Thesis presents a decent argument, but could use refining - Evidence is relevant, but not consistently strong - Evidence has undeveloped analysis - Evidence sometimes supports central argument 	<ul style="list-style-type: none"> - Paper lacks a clear and effective structure - Paragraphs somewhat connect ideas - Transitional sentences are used occasionally, but used ineffectively 	<ul style="list-style-type: none"> - Paper somewhat fits the style and audience of an op-ed - Paper underutilizes voice throughout - Sentence structure and word choice are confusing or unfocused - Occasional grammar, spelling, and punctuation mistakes
2	<ul style="list-style-type: none"> - Responds inappropriately to prompt - Thesis is weak; argument is unclear or vague - Evidence is often irrelevant and weak - Analysis misrepresents evidence or is insufficient - Evidence rarely supports central argument 	<ul style="list-style-type: none"> - Paper lacks structure and jumps from one idea to the next - Limited connection between ideas - Paper lacks topic sentences and transitional sentences 	<ul style="list-style-type: none"> - Paper does not fit the style and audience of an op-ed - Paper uses an unclear or inappropriate voice throughout - Sentence structure and word choice are simple, monotonous or awkward - Many grammar, spelling, and punctuation mistakes
1	<ul style="list-style-type: none"> - Does not respond to prompt - Thesis is unclear, irrelevant, or missing - Argument has little to no analysis - Lack of connections between evidence and argument 	<ul style="list-style-type: none"> - Paper lacks coherence and structure - Paragraphs do not connect ideas - Transitional sentences are not used 	<ul style="list-style-type: none"> - Paper does not fit the style and audience of an op-ed - Paper does not use any voice - Riddled with awkward sentence structures and word choices - Riddled with grammar, spelling, and punctuation mistakes

APPENDIX B

INTERVIEW QUESTIONS

1. How would you describe your experience with academic writing?
 - a. Have you been exposed to writing peer revision/peer tutoring before? As the giver or the recipient of feedback?
 - b. Have you ever received a lesson or training for peer revision/peer tutoring prior to this study?
 - i. If yes: Can you describe your training?
2. How would you describe your typical academic writing process before this experiment (in terms of brainstorming, outlining, writing, revising etc.)?
3. Did you use this writing process while writing Essay 1?
 - a. Were there any changes?
 - i. If yes: How?
4. Did you use the same writing process for Essay 1 and Essay 2?
 - a. If no: How did your process change?
5. Did the training change anything about your writing process in Essay 2?
 - a. If yes: How?
 - b. Were there any particular takeaways from the training, observations, and revision assessment that you applied to Essay 2?
6. How would you rate the argument, structure, and style of your Essay 1 from 1-10?
 - a. Why?
7. How would you rate the argument, structure, and style of your Essay 2 from 1-10?
 - a. Why?
8. How would you rate your ability to detect, diagnose, and resolve issues in the revision assessment?
 - a. Why?
9. Do you think it is easier to revise someone else's writing or your own writing? Why?
10. How did thinking-aloud affect your writing process?
11. Is there anything else you would like to add about your experience with this study?

APPENDIX C

ADDITIONAL THINK-ALOUD AND INTERVIEW DATA

Examples of Changes in Self-Feedback
<p>P14 [Peer Tutoring, Argument] Interview: I tried to keep a better eye for sort of making sure that from the editing process, making sure that what I had was relevant and that I wasn't sort of jumping off on tangents. Post-Essay Think-Aloud: I think now kind of reaching the more towards the end of the op-ed I want to go back and revisit some of the points I've touched on in the intro to make sure that I have included everything I wanted to talk about and didn't include too much of stuff that I didn't even introduce at the start and go back and read that.</p>
<p>P18 [Peer Tutoring, Structure] Interview: I think it made me a little bit more cognizant of the structure like I feel like if I go back and I read the first one right now, I'd be like, we could probably do with like moving things around a little bit like just doing like a reverse outline. But for this like the second one I was doing it after I finished the paper. And so I think that was most helpful because I like, I recognized when I was making certain points than didn't necessarily go together. And when I was making points that could have been like either before a paragraph or after a paragraph and just like reworking the essay, so it all flowed together a little bit better. Like it was more consistent. Post-Essay Think-Aloud: I hate having to, see, this is where a reverse outline will come in handy. But who has the time for that? Like, I know this paragraph would be better if it was like, came like, immediately after this other one, but I then feel like it'll just throw the entire paper off. You know what, we're just going to move it. Post-Essay Think-Aloud: See the thing is I had that right there because it gives context to the university, but if I can just move this...Or I can just, [participant name], you're such a genius. And then we have the counter right there. Duh. And then we can just get rid of this pesky little paragraph. Okay.</p>

Examples of Changes in Writing Processes

P5 [Peer Tutoring]

Okay, so before it was kind of just take the prompt and write how I feel, kind of look at a couple sources. Now, I think it's much, it's improved because it helps me like think about, okay, what is the audience thinking, let's go back through this and ask myself questions, as though if I was just the reader and on the other hand, what questions would I ask myself? And um just things like that, just kind of going through, actually revising my paper, being able to revise my paper, like I how I should. I felt like I didn't know that step before and I think now it has helped me grow on that stuff for sure.

P13 [Peer Tutoring]

I do remember really liking the segment of the training where like, you like, in like five words or something kind of broke down what each paragraph was about, or something like that. And I felt like that kind of influenced how I pulled together themes in the paragraphs to kind of make it flow a little better and be a little less all over the place.

Examples of Audience Awareness

P1 [Peer Tutoring, Audience]

Interview: I think that my editing process was a bit more focused in terms of like trying to be objective, like pretending to be my audience.

Post-Essay Think-Aloud: But language in context is such a good phrase...Okay, I'll cut it. If I were someone else, I would think that I should cut it... This still kind of reads as unclear.

Post-Essay Think-Aloud: This intro paragraph is a bit unclear as to like what my main topic is, so we're just gonna write that: "It's unclear what your main topic is here. It seems like you want to say that college is a diverse place and language requirements add to that?"

P15 [Peer Revision, Audience]

Interview: I started to think back about like how I did those [revising examples], and I try to apply it to this, like, oh, I don't like how this is phrased, is this what I'm trying to like portray like, is this the message I'm trying to send, so I guess that kind of helped me think more about whether what I'm writing was going to like, what's it called...um like, whether it's going to be, I guess, more effective for like who I'm writing. Yeah, like better for the arguments.

Post-Essay Think-Aloud: So I think the audience is thinking, ya know, gonna say no language requirements. Should I be mentioning my stance earlier? Maybe, maybe. I think I'll add it here.

Post-Essay Think-Aloud: So more how it is being taught. Okay. Well, I mean, I guess the reader can't see that link so, hm. I'm gonna add a little gap here that I might fill in later.