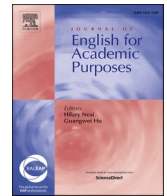




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## EFL student engagement with giving peer feedback in academic writing: A longitudinal study

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## ABSTRACT

While a number of studies on peer feedback in academic writing have been done on how students engaged with received feedback in a single assignment, little work has examined engagement with giving feedback and across a longer timeline, which is problematic for a pedagogical technique that is often new to EFL students and should be used repeatedly in a semester. Using a mixed method design that draws upon transcripts of voiced peer comments, monthly reflection journals, semi-structured interviews, stimulated recalls, and two rounds of a self-efficacy survey, this longitudinal study examined how three EFL undergraduates of relatively different proficiency levels affectively, behaviorally, and cognitively engaged with giving feedback over ten iterative feedback practices in an EAP writing course. The findings showed both initial engagement differences and extensive gains in engagement across all three learners despite challenges in proficiency and self-efficacy. Pedagogical implications of how peer feedback could be enhanced in EAP writing courses are discussed.

## 1. Introduction

Peer feedback can exert powerful effects on learning writing in foreign/second language (EFL/ESL) settings, and many studies have uncovered benefits of and challenges to effective peer feedback (Chang, 2016; Chen, 2016; Hyland & Jiang, 2021; Li et al., 2021; Schunn & Wu, 2019; Vuogan & Li, 2022). Among the constraints limiting learning benefits, engagement with peer feedback has come to the foreground in a growing number of studies (Dao et al., 2021; Fan & Xu, 2021; Han & Hyland, 2015; Yu et al., 2019). Much of the focus in past work on engagement in peer feedback has been on how students engage as feedback receivers (e.g., Ellis, 2010; Fan & Xu, 2021; Han & Hyland, 2015; Tian & Zhou, 2020), not on how students engage as feedback providers, even though providing peer feedback has emerged as the stronger learning opportunity (Lundstrom & Baker, 2009; Papi et al., 2019; Schunn & Wu, 2019; Zong, Schunn, & Wang, 2021a).

In particular, three sets of findings support the focus on providing: providing feedback, not receiving feedback, was found to enhance writing self-efficacy and learning enjoyment (Lee & Evans, 2019; Su & Huang, 2021); the length and number of provided rather than received feedback predicted growth in feedback quality (Zong, Schunn & Wang, 2021b); the length of provided rather than received feedback predicted growth in writing quality across academic writing assignments (Zong, Schunn, & Wang, 2021a; Gao & Liu, 2021). Therefore, it is especially important to examine engagement with providing peer feedback.

In academic writing learning *per se*, peer feedback is an indispensable skill (Yu, 2021). Academic writing has been commonly

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portrayed as a complex, effortful, and stressful task for students (Yu & Liu, 2021). Peer feedback, in the academic writing context, focuses especially on higher-order writing issues, functions to train students' critical thinking skills and to socialize learners into academic dialogue, thereby confronting the cognitive, behavioral, and emotional challenges that academic writing entails for EFL learners (Su & Huang, 2021; Yu et al., 2019). Peer feedback has been practiced across the full range of EFL contexts, from undergraduate EFL students who still struggle to write academic paragraphs to graduate students who need to finish their master's or doctoral thesis (Zhang, Schunn, Li, & Long, 2020; Yu et al., 2019). Though studies have documented students' concerns and achievements with peer feedback, a longitudinal investigation of the peer feedback-giving process in learning academic writing is very much under-explored. A deeper understanding of feedback engagement over time is important to understand what elements naturally develop with experience and which elements need further instructional support for improving academic writing and student emotional well-being.

Drawing upon multiple sources of data including semi-structured interviews, stimulated recalls, voiced peer comments, monthly reflection journals, and surveys of students' self-efficacy across a semester, this longitudinal study examined how three students affectively, behaviorally, and cognitively engaged with giving peer feedback over ten academic writing practices at a key university in Northeast China. Tracing longitudinal engagement with giving feedback across a term, the study uncovered the dynamics of student engagement with giving feedback, which have pedagogical implications for how to sustain engagement with feedback in EAP writing.

## 2. Conceptualizing student engagement with giving feedback

Engagement generally refers to the way in which students interact with a particular task. Student engagement is frequently regarded as a three-dimensional construct of affective involvement (i.e., positive, high arousal emotions vs. negative, low arousal emotions), behavioral participation (e.g., completing optional tasks or completing required tasks fully and in a timely fashion), and cognitive processing (e.g., on-task, semantically-rich, and reflective cognition) during learning tasks (Fredricks et al., 2004, 2011; Wong & Liem, 2021). In EFL feedback activities, student engagement with received feedback has been investigated in terms of emotions about received feedback, amount of revision operations in response to peer feedback, and evaluation of received feedback, and these aspects have been framed in terms of the three dimensions of engagement (Ellis, 2010; Fan & Xu, 2021; Han & Hyland, 2015; Yu et al., 2019).

The current study shifts the focus from receiving feedback to giving feedback, while still applying the affective-behavioral-cognitive dimensions of engagement, since giving peer feedback is as affectively complicated, behaviorally effortful, and cognitively demanding as receiving it, if not more so. For example, while receivers could easily choose to ignore feedback, givers are more directly tasked with identifying problems, weighing their importance, considering possible solutions, and phrasing the feedback in a way that will be persuasive and balanced. Further, the sub-constructs and specifics in each engagement dimension likely have to be adjusted conceptually to the nature of giving rather than receiving feedback.

Affective engagement has predominantly centered on emotion/affect in early framings of engagement (Fredrick, 2004), but within the literature on engaging with received feedback, it has also included attitudinal indicators such as value (Ellis, 2010; Han & Hyland, 2015; Fan and Xu, 2021; Zhang, Li, Long, & Gao, 2019). We argue that value is a separate factor from engagement. First, value in itself is not an indicator of the character of the interaction with the feedback task (i.e., the engagement itself). Second, value and affect are not synonymous, with the former prioritizing learner beliefs and the latter focusing on feelings or emotions. Third, a number of studies frame value or other attitudes like self-efficacy as causal factors that shape engagement (Linnenbrink & Pintrich, 2003; Zou, Schunn, Wang, & Zhang, 2018; Miwa & Jitosh, 2020) or are reciprocally influenced by engagement (Bathgate & Schunn, 2017). In line with these studies, the current study examined the affective engagement in terms of emotional valence and willingness.

In line with the research on engagement with received feedback (Ellis, 2010; Han & Hyland, 2015), we conceptualize students' behavioral engagement in providing feedback in terms of the observable behaviors in giving peer feedback. An important behavioral index is comment length, which predicts both the helpfulness of students' provided comments (Zong, Schunn, & Wang, 2021b) and how much students learn from providing feedback (Zong, Schunn, & Wang, 2021a). Other indexes such as timely submission of reviews and numbers of submitted reviews could also be used as supplementary behavioral engagement measures (Wu & Schunn, 2021; Zou, Schunn, Wang, & Zhang, 2018, Zong, Schunn, & Wang, 2021a). We do not separate amounts of praise and critical feedback since both can contribute to the perceived value of the comments produced and to the reviewers' learning (Patchan, Schunn, & Correnti, 2016).

**Table 1**

A multi-dimensional framework for learner engagement with providing feedback.

Engagement dimension	Subconstructs within each dimension
Affective	a. Valence of emotions involved during providing feedback b. Willingness to provide peer feedback
Behavioral	a. Effort in providing peer feedback b. Timeliness in providing peer feedback
Cognitive	a. Depth of cognitively complex higher order writing problems b. Breadth of cognitive functioning including identifying problems, diagnosing problems, and suggesting possible resolutions of problems

Work on receiving feedback has conceptualized cognitive engagement in terms of depth of processing such as awareness at the level of noticing (Han & Hyland, 2015). Our conceptualization of students' cognitive engagement in providing feedback finds its conceptual support from several foundational models of writing and revising processes: identifying problems, diagnosing problems, and resolving problems (Flower et al., 1986; Hayes, 1996; Scardamalia & Bereiter, 1983). Writing and peer feedback on writing research often further divides the problems in terms of higher-order content and lower-order language issues, as global issues tend to need deeper processing than do surface issues (e.g., Patchan, Schunn, & Correnti, 2016; Zong, Schunn, & Wang, 2021a; Min, 2005; Scardamalia & Bereiter, 1983). The more students identify, diagnose, and resolve problems in randomly assigned writing, the higher their cognitive engagement with giving feedback, especially with deeper processing of higher-order problems (Min, 2018).

Based upon the above analysis, a multi-dimensional framework for learner engagement with providing feedback was constructed and is presented in Table 1.

### 3. Review of empirical studies of student engagement with giving peer feedback

Past studies of student engagement with giving peer feedback have typically taken place in higher education contexts where academic writing and peer feedback are increasingly important either in disciplinary courses or in EFL courses (Bathgate & Schunn, 2017; Zhang, Schunn, Li, & Long, 2020; Yu et al., 2019). Thus far, engagement has been conceptualized in terms of three dimensions: student affect, student behaviors, and student cognition. Often these studies addressed one or two aspects in isolation, and a number of these studies did not use the engagement framework *per se*.

EFL students, in particular, have demonstrated mixed feelings about providing peer feedback. On the one hand, EFL students felt good because it helped them voice their ideas; on the other hand, students were sometimes frustrated by their low self-efficacy (Carson & Nelson, 1994; Zhou et al., 2019). More self-efficacious peers likely felt more positive about offering comments (Gan et al., 2021). However, sometimes such students experienced boredom or frustration when they were too busy to assess their peers' work (Wen & Tsai, 2008). Another aspect of affective engagement is related to issues of "face". Students might worry losing face to their peers when asked to critique their peers (Topping, 2003). However, how students initially formed or changed their emotions over time needs further investigation.

Peers can perform feedback perfunctorily due to passivity or they can show higher levels of behavioral engagement than even teacher feedback in terms of timeliness and responsiveness (Zou, Schunn, Wang, & Zhang, 2018; Topping, 2003). Comment length, another behavior index, is very important because long comments often include useful components such as localization and explanations of the problem, mitigating praise, and potential solutions (Patchan, Schunn, & Correnti, 2016; Zong, Schunn, & Wang, 2021a; Min, 2018). In addition, other behaviors such as asking for help, clarification, and negotiation are good signs of learning (Jin et al., 2022). Whether students can sustain good behaviors in providing peer feedback is very much under-researched.

Giving peer feedback critically is, by nature, cognitively demanding, as it goes beyond retrieving knowledge of course content, and extends to the clarification of the problem and justification of the solution (Han & Xu, 2020; Min, 2018; Nelson & Schunn, 2009). Thus, the deeper the peer feedback provider thinks, the more critical and useful the provided comments are likely to be. For example, Nelson & Schunn (2009) identified common forms of provided peer feedback in terms of mitigating praise, problems only, and problems and suggestions in academic writing, and the last category contributed most to better revision. Gao et al. (2019) found EFL students made critical and useful comments, but they tended not to point out some of the most crucial problems in EAP writing, while Min (2018) suggested peer feedback could approximate teacher feedback in terms of quality and manner. Whether EFL students can point out key problems, explain, and solve them remains a debated issue. In addition, how cognitive features of peer feedback change with experience is underexplored. In academic writing in particular, how students use and develop academic knowledge and writing skills through engagement with giving feedback is largely unknown (Zong, Schunn, & Wang, 2021b; Gao & Liu, 2021; Huisman et al., 2018).

The three dimensions of student engagement may also vary by individual characteristics such as language proficiency and self-efficacy in peer feedback. For example, high proficiency reviewers were found to provide more criticism, while low proficiency reviewers provided more praise (Patchan & Schunn, 2015). Student self-efficacy also affected their emotional engagement with receiving feedback on content and language (Tsao, 2021). The trajectories of engagement with giving feedback could develop differently for individual learners with different starting abilities and self-efficacies. In-depth longitudinal studies could help uncover the dynamic and complex nature of the three dimensions of engagement in students' peer feedback-giving practices (Huisman et al., 2018). Such studies could then inform pedagogical practices of how to best engage students in academic writing and feedback over time, as peer feedback is an important academic skill in itself (Liu & Carless, 2006).

## 4. Methods

### 4.1. The study

The study adopted a longitudinal mixed-method study approach to examine in depth how college students engaged with providing feedback across a semester of consistent reflective practices with peer feedback. Qualitative case studies clarify the nature of engagement and student meaning-making that drives change over time; quantitative analysis helps to situate the cases in larger patterns of change.

Specifically, we asked the following research questions:

- What is the overall engagement with providing feedback for the three students at the beginning and end of the semester?

- How did students affectively engage with providing feedback over ten iterative practices?
- How did students behaviorally engage with providing feedback over ten iterative practices in both quality and quantity?
- How did students cognitively engage with providing feedback over ten iterative practices in both quality and quantity?

#### 4.2. Context and participants

The research was conducted in a first-year, eighteen-week, academic online writing course with 43 registered students at a selective university in Northeast China of approximately 30,000 students. The focus of the course was to develop English major students' basic academic writing skills such as comparison and definition, and language skills such as sentence variety. The course was given by the first author specializing in EAP. The teaching of academic writing followed a sequence of observation of model writing, emulated writing, peer feedback, reflection, and revision. Across writing assignments, students were taught, trained on, and evaluated on four essential academic writing skills: unity, support, coherence, and wording/sentence skills (Appendix A). Before students practiced providing feedback around skills in these four areas, they observed model feedback according to a four-step feedback strategy, namely "clarify authors' intentions, identify problems, explain problems and solve problems" (Min, 2005). For every assignment, teachers also modeled providing feedback using several student writing samples.

Three first-year English major undergraduates (all 19 years old) were selected as focal study participants: Jocelyn, Mandy, and Rosa (pseudonyms) based on both convenience sampling (willingness) and deliberate sampling (variety in writing proficiency and self-efficacy). The students were Chinese native speakers from small urban cities in three different provinces, but had studied English for at least ten years, with English test scores ranging from 135 to 143 out of a full score 150 in the university's entrance examination (which is in the upper level across the country). As English majors attending a selective university, they generally had high motivation for learning writing, and high motivation is a relevant factor in engagement with learning tasks (Huisman et al., 2018; Yu et al., 2019). They reported that their previous writing experiences in English were typically only short writing assignments of approximately 150 words, so academic paragraph and essay writing was still challenging for all of them. Based upon a diagnostic writing test (Appendix B) administered in the first writing session and initial self-efficacy survey (Appendix C) responses, Jocelyn was a high proficiency (6/7)/middling self-efficacy (7.5/10) writer, Mandy was a low proficiency (5.25/7)/middling self-efficacy writer (7/10), and Rosa was a low proficiency (5/7)/low self-efficacy writer (2.6/10). The fact that these three students had no prior experience giving peer feedback provided an excellent opportunity to study growth in engagement as a function of experience.

#### 4.3. Procedures

*DingTalk* was used for instruction, peer reviewing, surveying, and interviewing. *DingTalk* is a free communication and collaboration platform that can be used to support group discussions and online whole class meetings. Students as writers could upload drafts to a group discussion board. Students as reviewers could download and evaluate their peers' files through audio/written messages. Peer feedback was given in a mixture of Chinese and English, but most often in Chinese.

Students were asked to voice peer comment in *DingTalk* every Friday for the whole semester. Then they began peer commenting on Friday afternoon and completed the reviewing by Sunday. Students were instructed to submit their feedback for at least three randomly-selected peer essays before the submission deadline. Therefore, across the 10 assignments that were roughly weekly from weeks 2 through 13, each student was asked to complete at least thirty reviews. The specific assignments are presented in Appendix C, and the timeline of all major classroom tasks and data collection activities are presented in Appendix D.

Two surveys of student self-efficacy in writing were collected from all students in class at the beginning and end of the semester (Appendix E). All students were also asked to submit three reflection journals at roughly one month intervals. In these journal entries, students were required to write around three hundred English words about four topics: progress in writing, problems in writing, their experiences with peer feedback, and their learning plans for the following month.

Semi-structured interviews with the three focal students were conducted in Chinese by three research assistants at the end of the term. Each interview lasted approximately 30 min. The interviews involved the following questions: "How did you give feedback at the beginning/end?", "Could you manage to give feedback?", "How did you feel about giving feedback at the beginning/end?", and "Why did you do peer review earlier/later?"

In order to triangulate findings, we collected three stimulated recalls with the three focal participants based upon entries from the monthly reflection journals and observed feedback-giving behaviors at the end of the course. Each stimulated recall lasted 50 min. One research assistant modeled how to do a stimulated recall based upon a piece of feedback before the participants completed the task. Question prompts given during the stimulated recalls were: "What were you thinking when you gave this piece of advice?", "What rewards were you thinking about when you wrote giving peer feedback was rewarding?", and "How were you feeling when you saw your advice was taken?"

#### 4.4. Engagement measures

Engagement was measured quantitatively and qualitatively in terms of three core engagement dimensions across each month of the semester. For each dimension, at each point in time, a dominant approximate level (low, medium, or high) was coded. By dominant, we mean the most common character across time and sources. These codes were approximate in the sense that there was some variability across data sources.

For affective engagement, only qualitative coding was done. Predominantly negative emotions about the process of providing

feedback (e.g., dislike) was coded as low, predominantly positive emotions (e.g., enjoyment) were coded as high, and mixed valence emotions or neutral emotions (e.g., nervous) as medium.

Quantitatively, behavioral engagement was based primarily upon effort as measured by the word length of provided peer comments. Word length was determined using transcripts of the auditory files. The transcripts from each review ranged widely in length, from as short as 120 words to as long as 1,879 words. Students had approximately three assignments per month and therefore a minimum of at least nine reviews to complete each month. To compare the three learners with reference to the full set of 43 students' whole range of word length, we used 4000 words as a dividing line because it was roughly the mean length for all students in the first month. For behavioral engagement, having a mean comment length per month of less than 4,000 words was coded as low, having a mean comment length between 4,000 words and 8,000 words was coded as medium, and having a mean comment length greater than 8,000 words was coded as high. No off-topic comments were found. In addition, the timeliness of the feedback was taken into account as a secondary indicator of behavioral engagement: whether students' completion of feedback was ahead of time, on time (just before the deadline), or delayed. When all the feedback was on time, only word length was taken as the distinguishing feature.

To support in-depth coding of cognitive engagement in the focal students, the comments students provided were systematically coded in terms of completeness of coverage (i.e., whether a specific problem was identified, explained, and/or solved). In particular, the number of identified, explained, and/or solved problems regarding unity, support, coherence, and sentence skills in peer comment was separately coded by two research assistants and checked for consistency by the teacher-researcher (see Table 2). Any disagreement was solved through further discussion. The first three categories belong to higher-order global issues, while the last category focuses on local issues such as grammar and word choice. The coverage of the comments was coded exhaustively. As a follow-up, comments were further examined to see whether students merely identified problems or whether they also explained the problems (e.g., "The 'washing spoon' sentence breaks the coherence in between [...]") and provided solutions (e.g., "Change 'show' into 'shows'" or "Add more facial expressions of your parents to intensify the tone"). A selection of representative comments made by each student at different time points are given in the results section.

For qualitative coding of cognitive engagement, lack of full coverage of the focal aspects of writing concerns (i.e., those of focus in the course and in the peer reviewing prompt) in the review comments (e.g., no discussion of unity issues) was coded as low, full coverage but with little diagnosis of identified problems (i.e., few explanations or possible solutions to identified problems) was coded as medium, and full coverage with consistently provided explanations and solutions was coded as high. As a quantitative measure of cognitive engagement, the greater the number of identified higher-order problems, the deeper and higher the cognitive engagement. Note that the coding of higher-order or lower-order comment concerns is described in Table 2. Note that while the reviewing rubric encouraged students to focus on higher-level writing issues, there were a wide variety of low-level issues that students could detect in each document and thus it was possible for a student to focus heavily on higher-level issues or predominantly on lower-level issues in this context.

In addition, to provide convergent evidence of engagement, indicators of affective, cognitive, and to some extent, behavioral engagement were coded from the reflection journals, stimulated recalls, and semi-structured interviews. Note that two different aspects of affective engagement could be extracted from these sources (emotional valence and motivational state). The top of Table 3 presents the coding scheme and specific examples that generated each code from those data sources.

## 5. Results

### 5.1. Overall student engagement with giving peer feedback

Table 4 presents a ranking of engagement levels over the semester for the three focal students. At the beginning of the semester, one of the lower proficiency writers, Rosa, had consistently low levels of engagement. The other lower proficiency writer, Mandy, began with more middling levels of engagement with peer feedback, perhaps related to her higher initial self-efficacy. The higher proficiency writer, Jocelyn, had a mixture of middling and high engagement at the beginning. By the end of the semester, all three had consistently high engagement along the affective and cognitive dimensions, and Jocelyn alone increased to high behavioral engagement, although the other two moved up to medium behavioral engagement.

Table 5 highlights the main changes in affective, behavioral, and cognitive engagement for the three students. Supporting details for this summary assessment are presented in the next three sections.

**Table 2**

The coding scheme for the focus of the problems in the peer comments with examples.

Writing issues		Definition	Example
<b>Higher-order issues</b>	Unity	Sticking to one main idea	<i>After "which means" is another reason.</i>
	Support	Giving specific and adequate details	<i>Add more facial expressions to intensify your parents' anxious tone.</i>
	Coherence	Coherence across sentences and smooth transition across paragraphs	<i>Lack of concluding sentence.</i>
<b>Lower-order issues</b>	Sentence skills	Word choice, grammar, and sentence writing skills	<i>Change show into "shows".</i>

**Table 3**

The qualitative coding scheme for engagement applied to the monthly reflection journals, stimulated recalls, and semi-structured interviews. Examples in italics are direct quotations.

Engagement/attitude	Specific Aspects	Examples
Affective engagement	Emotional valence	<i>I detested peer feedback.</i>
Behavioral engagement	Motivational state	<i>I hesitated to give feedback.</i>
	Effort	<i>I gave feedback right after class.</i> <i>I deleted voiced message and redid feedback.</i> <i>I asked for help in giving feedback.</i>
Cognitive engagement	Cognitive strategies	<i>Looking up new words.</i> <i>Read writing checklist again.</i> <i>Check collocation in Coca.</i>

**Table 4**

Overall levels of engagement with peer feedback at the beginning and end of the semester for each of the three focal students (at low and high writing proficiency levels).

	Beginning of semester			End of semester		
	Affective	Behavioral	Cognitive	Affective	Behavioral	Cognitive
Rosa (low)	<i>Low</i>	<i>Low</i>	<i>Low</i>	<b>High</b>	Medium	<b>High</b>
Mandy (low)	Medium	<i>Low</i>	Medium	<b>High</b>	Medium	<b>High</b>
Jocelyn (high)	Medium	Medium	<b>High</b>	<b>High</b>	<b>High</b>	<b>High</b>

**Table 5**

Summary of engagement indicators for each focal student at two time points.

Dimension	Subconstruct	Time point	Rosa (Low prof., low SE)	Mandy (Low prof., med SE)	Jocelyn (High prof., med SE)
Affective	Emotional Valence	1st month	<b>Low:</b> detested peer feedback	<b>Medium:</b> super-nervous about giving peer feedback	<b>Medium:</b> worried about giving peer feedback
		Last month	<b>High:</b> felt at ease with it	<b>High:</b> felt at ease with it	<b>High:</b> felt grateful
	Willingness	1st month	<b>Low:</b> did not want to give feedback	<b>Medium:</b> felt had to do peer feedback	<b>Medium:</b> hesitated to give critical feedback
		Last month	<b>High:</b> gave peer feedback willingly	<b>High:</b> liked to give feedback	<b>High:</b> liked to give feedback
Behavioral	Comment length	1st month	<b>Low:</b> 2,655 words	<b>Low:</b> 2,940 words	<b>Medium:</b> 5,540 words
		Last month	<b>Medium:</b> 6,861 words	<b>Medium:</b> 6,152 words	<b>High:</b> 11,764 words
Cognitive	Comment quantity (all identified more higher-order problems) and quality	1st month	<b>Low:</b> did not identify any unity problems when such problems were salient.	<b>Medium:</b> could identify problems, but tended not to elaborate why or provide solutions	<b>High:</b> identified problems, explained them, and offered rather specific and detailed suggestions
		Last month	<b>High:</b> identified all kinds of problems and gave suggestions	<b>High:</b> identified more problems with plentiful explanations or solutions.	<b>High:</b> applied wording from the review checklist more skillfully

## 5.2. Students' affective engagement

Overall, students' emotions involved in providing peer feedback and willingness of doing so grew increasingly more positive, both for the higher proficiency learner Jocelyn and for the lower proficiency learners Rosa and Mandy, as their self-efficacy in doing peer feedback improved from the beginning (Joycelyn 7.5/10, Rosa 2.6/10, Mandy 7/10) to the end (Joycelyn 8.7/10, Rosa 7/10, Mandy 8.4/10).

**Jocelyn: Moving from “anxious about giving critical comments” to “feeling grateful for the process”.** Despite being a higher proficiency writer, Jocelyn was initially anxious about the process. “I was very worried about giving online peer feedback, because it is randomly assigned. Many times I was not well acquainted with the peer writer.”, she said in the stimulated recall. However, only two rounds of peer comments later, when she found she “could learn so much from her peers’ writing”, she “felt amazed” as she wrote in her first reflection journal. In the stimulated recall, she reported, “When I found classmates were serious in wanting to improve themselves through my comments, I wanted to offer more comments as needed.” Her comments often ended with an invitation, “we could have a chat and exchange ideas further about it.” She soon came to take giving comments as a very enjoyable and rewarding experience as she wrote “I am grateful for this [peer review] process ...” in her first reflection journal. Jocelyn was among the first to appreciate peer feedback as a learning activity.

**Rosa: Moving from “I detest peer feedback” to “I felt good” when getting sincere thanks.** At first, Rosa was very reluctant, as she wrote in her journal, “I can take others’ suggestions, but I don’t want to make comments on others”. When asked to clarify what she was thinking at the time in the stimulated recall, she confided, “my peer classmates are so capable of doing peer comments, I feel very, very incompetent and I detest peer feedback also because I have to present my comments in an open space where everyone can be heard”. She went on to explain, “I have never experienced peer comment since childhood, and I am not that extroverted to vocalize my ideas that way.” She was so afraid of losing face in an open conversation space, she asked for permission from the writing instructor about whether she could speak personally to others. When her instructor persuaded her of the benefits of accessing all the voiced messages, she did not persist in her resistance. She changed her mindset later, as her self-efficacy for peer commenting improved dramatically and she told the teacher that she could give more useful comments as her peers’ responses to her comments turned to be very positive. She said in an interview, “feedback became part of my Friday academic life. When I gave feedback to others, I got sincere thanks in return and I felt good about it.”

**Mandy: Moving from “super-nervous” about the tone and criticality of the peer feedback to “more direct in commenting”.** Although also a lower proficiency writer, Mandy did not feel so incompetent in giving feedback as did Rosa. She was “super-nervous about her critical feedback’s side effects on others” because she felt heart-broken by so many critical comments on her first writing when she was interviewed at the end of the semester about her emotional experience. She wanted to make sure the content and the tone of voice involved a lot of praising before providing a critical comment. Around two months later, when she found that her peers were also becoming used to such critical and useful feedback by addressing her nickname and answering with more “thank you” and “kiss” emoticons and a promise to solve the problems, she became more relaxed: “I became more direct in commenting, by starting with ‘to cut the praise short, I found several issues in the paper’.”

### 5.3. Students’ behavioral engagement

All three students were highly punctual peer reviewers who completed the required number of reviews and showed development in length of peer comments. Individually, however, they showed some developmental differences.

#### 5.3.1. Qualitative signs of behavioral engagement

Though the instructor told them to do it within three days, and many students did it right after class on Friday, including Rosa and Joycelyn. Mandy improved her timeliness around one and a half months later: she finished reviews on the second day at the beginning, but later changed to completing reviews immediately after class, as she reported in the interview, “I wanted to catch up with others in providing feedback”. Rosa, the other weak writer, also extended her behavioral engagement: she reported asking her roommates more for help when she wanted to give high quality peer feedback in the middle of the semester and reduced asking for such help by the end. Jocelyn’s behavioral engagement was highest in two more ways. First, when appreciating peer work, Jocelyn sometimes “wrote down fantastic sentence patterns and persuasive examples” produced by her peers, as she noted in her second reflection journal, though she herself quite often was already the very best student writer in the class. Second, at the end of her comments, she always added a sentence, “if there were any more issues, I would like to talk about it with you further.” A private follow-up conversation via DingTalk sometimes followed.

#### 5.3.2. Quantitative signs of behavioral engagement

Comment word length documented their behavioral changes. Although Jocelyn, the initially higher proficiency writer, began with comments that were generally twice as long as those made by the other two students, comments generally grew in length for all three students, particularly from the first to second month (see Fig. 1). Compared with their first experience, the comment length was quite often doubled, even tripled, or quadrupled sometimes. At the beginning, Rosa said sadly about her comment length, “my first voiced comment lasted only 28 s (120 Chinese words), simply because I had no idea about what else to say about the draft.”

### 5.4. Students’ cognitive engagement

Deeper cognitive processing of peer texts can be traced through qualitative and quantitative comparisons of comments made between the first and last months.

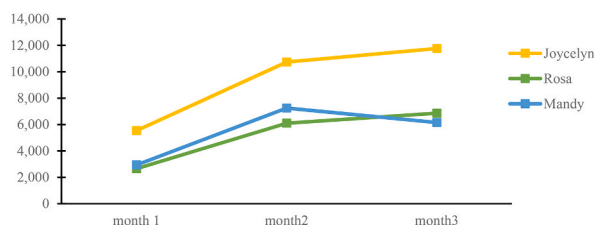


Fig. 1. Monthly records of comment word count Total word length of peer comments provided by each of the focal students in each month.

**Table 6**

Illustrative examples of problem-focus peer comments on each writing dimension for each focal student in the first and last months.

Skills				
Name	Unity	Support	Coherence	Wording/sentence skills
Jocelyn first month	<i>Your first reason was elaborated too much. After “which means” is another reason: to be respectable.</i>	<i>Specify why the career is enjoyable by adding examples like not only a way of rendering pleasure to others, but a way of self-improvement.</i>	<i>The last but one paragraph about similarities need to be readjusted to the first one to make the other parts more logical.</i>	<i>There are a few small mistakes like the misspelled “star” in your first sentence.</i>
last month	<i>The last point deviated from the topic sentence: buying presents for lovers is not related to alleviating financial burden.</i>	<i>Probably give more space on your argument with your father, especially your emotion part, as the theme is on our emotion.</i>	<i>The “washing spoon” sentence breaks the coherence in between and need to be positioned later.</i>	<i>Here I guess what you want to express is “point”, so I suppose maybe you misspelled it. Am I right?</i>
Rosa first month	<i>∅</i>	<i>Your second point “not afraid of public opinion” is not very convincing.</i>	<i>Lacking a natural conclusion</i>	<i>More appropriate if money changed to earning</i>
last month	<i>Details did not match alleviating parents’ financial burden. I suggest changing the key words into improving my economic condition.</i>	<i>When you depicted your reaction to the queries about your volunteer identity, I think it lacks personal emotional description. That is when you faced the situation, what your mood is like and what your emotion is like. So does the “gentlemen” part in the next paragraph. For me, both parts lack emotional expressions, so it would be better to add some.</i>	<i>Describe the beard first, and then the mouth, and it will flow better.</i>	<i>Change “show” into “shows”</i>
Mandy first month	<i>Give more room for attractions instead of irrelevant details like importance of culture.</i>	<i>Elaborate the attractive part of the career</i>	<i>Lack of concluding sentence.</i>	<i>There are some minor mistakes, such as the case sensitive problem.</i>
last month	<i>Delete the introductory sentence and directly go into portraying the figure.</i>	<i>Add more facial expressions of your parents so to intensify the anxious tone</i>	<i>The third point does not flow well from the second one, though they should follow the time sequence of how to do.</i>	<i>What do these three verbs mean by putting together a piece? Is there a comma missing here? I suppose it is the lack of punctuation comma. I was almost to consider it is a wrong sentence.</i>



#### 5.4.1. Qualitative signs of cognitive engagement

In terms of providing comments on all focal aspects of writing and with deeper comments including explanations and solutions, the two low proficiency writers, Rosa and Mandy, showed considerable development over time. Typical (translated) problem-focused comments for all three students in the first and last month are shown in Table 6.

At first, Rosa did not identify any “unity” (sticking to one point in writing) problems though such issues actually occurred quite often in this group of EFL writers. For example, she did not point out the problem that a family’s love towards a person was not the person’s own passion in the first writing of “my three passions”. Interestingly, Rosa had made the same mistake in her own first writing. Mandy did a little bit better than Rosa in identifying problems at the start. She could identify more problems, though often not with a thoughtful recommendation for improvement (e.g., see the example comments for Mandy’s first month in Table 6). Approaching the final month, both Rosa and Mandy gave critical comments, explanations of the problem, and useful suggestions for improvement (e.g., see the example comments for their last month in Table 6). By contrast, the high proficiency writer, Jocelyn, would account for why there was a problem and usually recommended a solution for improvement throughout the semester (e.g., Jocelyn’s comments for the first and final month in Table 6). More subtle improvements over time could be identified in Jocelyn’s comments: she came to skillfully use the key words of unity, support, and coherence in commenting. For example, she roughly identified coherence as “logic” at the beginning, but finally realized that sentential transition is a key component of coherence (e.g., Jocelyn’s comments on coherence in Table 6), as she reflected in the stimulated recall.

In terms of cognitive strategies, all of them reported the use of learning sources when giving feedback. Jocelyn reported in her first monthly reflection journal that she began to use dictionaries to look up new words or new interpretations of familiar words when giving feedback. The same occurred with Mandy and Rosa, who reported in their second monthly reflection journal that they often searched online for information about usage, spelling, and collocations.

#### 5.4.2. Quantitative signs of cognitive engagement

The number of identified higher-order problems each month (four weeks of peer feedback) also showed changes in the depth of the three students’ cognitive processing (see Fig. 2). Overall, the three peers generally pointed out more higher-order problems as time progressed across the semester.

## 6. General discussion

Previous studies involving EFL writing or higher education in general have typically documented engagement levels in terms of one-shot engagement with receiving feedback (Fan & Xu, 2021; Han & Hyland, 2015; Winstone & Carless, 2020; Yu et al., 2019). By contrast, the current observational study shifted the focus to the evolving levels of students’ engagement with providing feedback in EAP writing across three months of experience with providing feedback, which is under-explored and requiring systematic scrutinization (Huisman et al., 2018). Previous studies found relatively low cognitive engagement levels in provided feedback such as relatively low concern with higher-order writing issues in general or academic genre-specific issues (Fan & Xu, 2021; Yu, 2021; Yu et al., 2019). They also found low proficiency, low motivation, or negative affect which limited participation (Han & Xu, 2020; Yu, 2021; Yu et al., 2019). Similarly, the current study also identified low engagement levels at the beginning of the semester. However, the current study found generally high engagement with giving feedback at the end of a semester, even in lower proficiency students: all students found more higher-order writing issues, accomplished the review task with many comments and high timeliness, and harbored positive emotions. The study also provided further support for three additional positive elements of peer feedback in EFL writing contexts: 1) feedback-giving as an especially important learning opportunity (Cho & Cho, 2010; Lundstrom & Baker, 2009); 2) iterative feedback practices’ having positive effects on academic writing (Zong, Schunn, & Wang, 2021b; Han & Xu, 2020; Yu, 2019); and 3) the development of students’ feedback literacy in academic writing (Yu & Liu, 2021).

What can account for the generally positive findings in the current study? One possible explanation is that students sampled in the

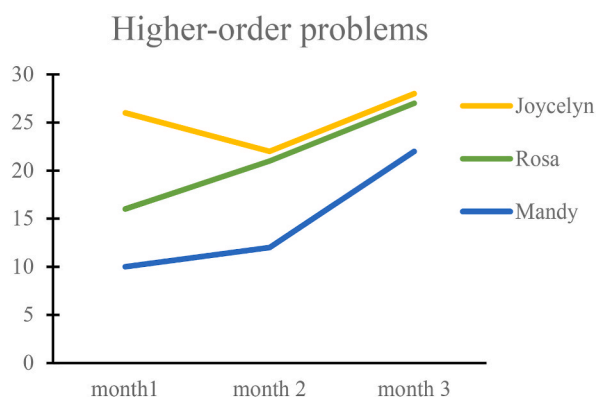


Fig. 2. Monthly records of identified higher order problems For each month, for each focal student, the number of higher-order text problems given in peer comments.

current study were English major freshmen from a selective university, so they generally had high motivation to learn academic writing. Indeed, these students demonstrated high agency in learning through negotiation with peers or the teacher and finished feedback ahead of time (Li & Zhang, 2021; Wang & Lee, 2021; Wei, Sun, & Xu, 2020; Yu & Liu, 2021). However, two of the focal students had lower writing proficiency. Further, the attitudes towards peer feedback for all three students were generally negative at the beginning, and their overall engagement levels were not high at that point in time. Thus, it is likely the opportunity to practice providing feedback as a regular routine was useful for them to develop strategies and skills for providing feedback at higher levels of engagement (Zong, Schunn, & Wang, 2021b). Thus, different from the more negative findings obtained in studies of one round of peer feedback (Gao & Yu, 2019; Fan & Xu, 2021; Yu, 2021), this longitudinal study observed that as students reviewed more essays, they were able to cognitively process more higher-order writing issues.

We note however that not all forms of practice with peer feedback will produce growth in peer feedback (Zong, Schunn, & Wang, 2022). The current study involved some pedagogical strategies which likely positively shaped the students' growth in engagement: random grouping (Zhang et al., 2020), multi-peer review (Schunn & Wu, 2019), and voiced messages (Lehrer et al., 1987). These elements likely enriched students' review experience compared with more typical pair work. For example, Wang (2014) found students view such feedback as gradually decreasing in usefulness as they could almost predict their paired peer's questions or advice. In addition, the instructor also played a role in providing a supportive task environment such as through feedback modelling (e.g. modeling the four-step strategy in giving feedback) and feedback process monitoring (e.g., teacher persuading Rosa to comment in an online space) by increasing their competence, reduced students' worries, and thus enhancing students' engagement with feedback.

Although engagement enhancement seems not centrally dependent upon proficiency and self-efficacy in the three cases, their proficiency and self-efficacy in giving peer feedback probably mediated their engagement as found in previous studies (Linnenbrink & Pintrich, 2003; Zhou et al., 2019). The two initially lower proficiency learners Rosa and Mandy engaged less well, as they were frustrated by either their low self-efficacy in giving comments or low writing skills evidenced in initially struggling to identify problems. Rosa, as an extremely low self-efficacy learner among the whole group, felt unable to give others critique and was unsure of her possibly "wrong" comments' usefulness. However, it was also interesting that Mandy, with higher self-efficacy, doubted that giving peer comments was beneficial to herself. To compare the three, the highest proficiency learner Jocelyn felt rather confident about giving peer feedback and her own writing though anxious about her critical comments. Interestingly, she adjusted her affect sooner and maintained intensive engagement.

Importantly, these students appeared to demonstrate assessment knowledge of academic writing through cumulative engagement with feedback: 1) Rosa, who initially could not identify unity problems, turned out to cover all areas of higher-order issues; 2) Mandy added more problem localizations and explanations before giving relevant suggestions; and 3) Jocelyn more skillfully used the assessment rubrics to talk about problem issues. Despite initial disparity in cognitive engagement, all three focal students completed the four steps (identify author intentions, clarify problems, explain problems, give suggestions) of peer review very well by the end of the semester. Such cognitive engagement could prepare them for higher quality academic dialogue and academic community (Gao & Yu, 2019; Yu & Liu, 2021).

## 7. Conclusion

The three students' engagement with providing feedback changed longitudinally for the better across the three engagement dimensions. Though their initial affective engagement towards peer feedback were not very favorable, their accumulated experience with giving feedback transformed them into engaging in higher engagement with peer feedback in this learning environment. Compared with high proficiency learner Jocelyn, lower proficiency learners Mandy and Rosa showed more dramatic improvements.

Pedagogically, the findings illustrate how students could develop their engagement for the better as their experience of it deepens. More experience with feedback reduces Jocelyn and Mandy's worries about their problem-focused comments, as well as Rosa's strong resistance against giving feedback. For EFL instructors new to the use of peer feedback, the current study may address doubts they may develop from initiating feedback activities only once or twice—their students might come to more positive engagement with additional (well supported) practice. The current study also suggests some elements that are likely useful for establishing a supportive academic writing learning environment, such as encouraging students to share writing and peer comments in an open tool like Dingtalk, using multi-peer review; and diversifying students' reader groups by randomizing peer reviewers, modeling a good peer feedback process (Min & Chiu, 2021), using a genre-centered teaching approach (Hu, 2005), and providing social-affective support (Xu & Carless, 2017). As the findings also suggest that initial low self-efficacy limits their initial engagement with peer feedback (Linnenbrink & Pintrich, 2003), teachers could give surveys to learn which students have low self-efficacy and pay special attention to those low efficacy students. For example, the teacher's dialogic feedback in the current study lessened low self-efficacy learner Rosa's frustration and resistance.

Methodologically, the current study provides examples of a range of qualitative and quantitative measurement strategies that could be used in studies of peer feedback engagement, enriching the qualitative approach in feedback participation studies (Han & Xu, 2020; Yu, 2019). For example, particular emotions, countable cognitive and behavioral efforts examined in this study could be the basis of larger scale studies that use techniques adapting the specific indicators observed in this study, such as emotion checklists, quantitative counts of comment length, or feedback self-efficacy surveys.

However, additional work is needed to examine the generalizability of the current findings across a larger number of learners and especially across a range of instructional contexts. Other limitations of the study need to be addressed in future work. First, using the three-dimensional engagement construct as the framework, the study explored how students engaged over time through several salient but potentially indirect indicators. Other more direct approaches to measuring students' engagement such as think-aloud were not

used. Second, more systematic engagement surveys could be designed to triangulate findings. Finally, the causes of their growing engagement need more systematic scrutinization.

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**Author statement**

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**Appendix A. Peer review checklist for writing**

*DESCRIPTION CHECKLIST: THE FOUR BASES*

**UNITY** Does my paragraph have a strongly stated topic sentence that clearly includes a dominant impression of the subject? Are there sentences or details that do not support my topic sentence and therefore should be eliminated or rewritten?

**SUPPORT** Have I included enough rich, specific details that appeal to a variety of senses (sight, hearing, smell, taste, touch)? Have I chosen dynamic and vibrant words that will enhance my description?

**COHERENCE** Do transitional words and phrases between sentences help make the description clear? Does my concluding sentence clearly tie up the paragraph and explain why this topic was significant enough to describe?

**SENTENCE SKILLS** Have I used a consistent point of view throughout my paragraph? Have I used specific rather than general words? Have I avoided wordiness and used concise wording? Are my sentences varied? Have I edited for spelling and other sentence skills errors?

**Appendix B. A diagnostic writing test**

Write an essay in which you identify three passions that have strongly influenced your life. Explain why each of them has been so important to you, and provide examples of how those passions have played out in your life. Time limit: 45 min.

**Appendix C. An academic writing assignment list**

Genre	Academic writing assignment list
Description	Description of a portrait of someone with a dominant impression
Narration	Narration of an event with a predominant emotion
argumentation	An argument about part-time job in the holiday
exposition	Cause and effect
	Exemplification
	Comparison and contrast
	Process
	Definition
	Three passions that have shaped my life
	An attractive career
	A comparison of two careers
	How to
	Corona virus
	Success
	Self-defined concept

**Appendix D. A timetable of the course and data collection**

Week	Data type	Tasks	Writing Assignments
1	Timed writing	Write an essay on three passions. Read first professional model writing, student sample writing, model feedback on sample writing and give peer feedback	Three passions (timed writing)
2	Peer feedback on first writing	Analyze good student feedback and write a second draft on first timed writing	an attractive career
3		Read model writing and write a first draft on an attractive career and give peer feedback	
4	Peer feedback on second writing	Write a second draft. Read model writing and write a first draft on comparison and give peer feedback.	Career comparison
5	Peer feedback on third writing and first reflection journal	write a second draft. Find information from credible sources about corona virus, write a definition of it and give peer feedback.	What is Corona virus?

(continued on next page)

(continued)

Week	Data type	Tasks	Writing Assignments
6	Peer feedback on fourth writing	Write a second draft on the definition of corona virus. Read model writing and write a first draft on success and give feedback.	What is your definition of success?
7	Peer feedback on fifth writing	Write a second draft	Self-selected concept
8	Peer feedback on sixth writing and second reflection journal	Write a first draft on self-selected concept and give feedback.	How to _____
9	Peer feedback on seventh writing	Write a second draft on a concept. Read model writing and write a first draft on how to and give feedback.	Description of a portrait
10	Peer feedback on eighth writing	Write a second draft. Read model writing, write a first draft on a portrait and give feedback.	Narration with a predominant emotion
11	Peer feedback on ninth writing and third reflection journal	Write a second draft. Read model writing, write a first draft on emotion and give feedback.	a part time job in the holiday or not?
12	Peer feedback on tenth writing	Read model writing and write the first draft and give feedback.	
13	Peer feedback on tenth writing	reflections and write second draft	
14		A debate on part-time job or not in the holiday	
16		A review of academic writing skills	
17		A review of language skills	
18	Interviews and stimulated recalls	Final Test	

### Appendix E. A self-efficacy survey

Tick one number from one to ten according to your perception of competence. Number 1 means least competent and Number 10 means most competent.

I am competent in writing.

I am competent in giving feedback.

I am competent in critiquing the writing.

I am competent in commenting the language issues.

I am competent in commenting the higher-order issues.

### References

- Bathgate, M., & Schunn, C. D. (2017). Factors that deepen or attenuate decline of science utility value during the middle school years. *Contemporary Educational Psychology, 49*, 215–225.
- Carson, J. G., & Nelson, G. L. (1994). Writing groups: Cross-cultural issues. *Journal of Second Language Writing, 3*(1), 17–30.
- Chang, C. Y. (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>
- Chen, C. (2016). Technology-supported peer feedback in ESL/EFL writing classes: A research synthesis. *Computer Assisted Language Learning, 29*(2), 365–397. <https://doi.org/10.1080/09588221.2014.96094>
- Cho, Y., & Cho, K. (2010). Peer reviewers learn from giving comments. *Instructional Science, 39*(5), 629–643.
- Dao, P., Nguyen, M. X. N. C., Duong, P.-T., & Tran-Thanh, V. (2021). Learners' engagement in L2 computer-mediated interaction: Chat mode, interlocutor familiarity, and text quality. *The Modern Language Journal. https://doi.org/10.1111/modl.12737*
- Ellis, R. (2010). A framework for investigating oral and written corrective feedback. *Studies in Second Language Acquisition, 32*, 335–349.
- Fan, Y., & Xu, J. (2021). Exploring student engagement with peer feedback on L2 writing. *Journal of Second Language Writing, 50*, Article 100775.
- Flower, L., Hayes, J. R., Carey, L., Schriver, K., & Stratman, J. (1986). Detection, diagnosis, and the strategies of revision. *College Composition & Communication, 37*(1), 16–55.
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(1), 59–109.
- Gan, Z., Hu, G., Wang, W., Nang, H., & An, Z. (2021). Feedback behavior and preference in university academic English courses: Associations with English language self-efficacy. *Assessment & Evaluation in Higher Education, 46*(5), 740–755.
- Gao, Y., Schunn, C. 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.
- Gao, Y., & Liu, H. (2021). The benefits of providing peer feedback in English writing and its influencing factors. *Technology Enhanced Foreign Language Education, 6*, 87–93.
- Han, Y., & Hyland, F. (2015). Exploring learner engagement with written corrective feedback in a Chinese tertiary EFL classroom. *Journal of Second Language Writing, 30*(4), 31–44.
- Han, Y., & Xu, Y. (2020). The development of student feedback literacy: The influences of teacher feedback on peer feedback. *Assessment & Evaluation in Higher Education, 45*(5), 680–696.
- Hayes, J. R. (1996). A new framework for understanding cognition and affect in writing. In C. M. Levy, & S. Ransdell (Eds.), *The science of writing: Theories, methods, individual differences and applications* (pp. 1–27). Mahwah, NJ: Erlbaum.
- Hu, G. (2005). Using peer review with Chinese ESL student writers. *Language Teaching Research, 9*(3), 321–342.
- 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.
- Hyland, K., & Jiang, F. K. (2021). A bibliometric study of EAP research: Who is doing what, where and when? *Journal of English for Academic Purposes, 49*, Article 100929.
- Jin, T., Jiang, Y., Gu, M. M., & Chen, J. (2022). "Their encouragement makes me feel more confident": Exploring peer effects on learner engagement in collaborative reading of academic texts. *Journal of English for Academic Purposes, 60*, Article 101177.
- Lee, M., & Evans, M. (2019). Investigating the operating mechanisms of the sources of L2 writing. *The Modern Language Journal, 4*, 831–847.
- Lehrer, R., Levin, B. B., Dehart, P., & Corneaux, M. (1987). Voice feedback as a scaffold for writing: A comparative study. *Journal of Educational Computing Research, 3*(3), 335–353.

- Li, H., Bialo, J. A., Xiong, Y., Hunter, C. V., & Guo, X. (2021). The effect of peer assessment on non-cognitive outcomes: A meta-analysis. *Applied Measurement in Education*, 34(3), 179–203. <https://doi.org/10.1080/08957347.2021.1933980>
- Linnenbrink, E. A., & Pintrich, P. R. (2003). The role of self-efficacy beliefs in student engagement and learning in the classroom. *Reading & Writing Quarterly*, 19(2), 119–137.
- Liu, N.-F., & Carless, D. (2006). Peer feedback: The learning element of peer assessment. *Teaching in Higher Education*, 11(3), 279–290.
- Li, W., & Zhang, F. (2021). Tracing the path toward self-regulated revision: An interplay of instructor feedback, peer feedback, and revision goals. *Frontiers in Psychology*, 11, Article 612088.
- Lundstrom, K., & Baker, W. (2009). To give is better than to receive: The benefits of peer review to the reviewer's own writing. *Journal of Second Language Writing*, 18(1), 30–43.
- Min, H. T. (2005). Training students to become successful peer reviewers. *System*, 33(2), 293–308.
- Min, H. T. (2018). Trained peer written feedback and teacher written feedback: Similar or different? *English Teaching & Learning*, 42, 131–153.
- Min, H. T., & Chiu, Y. M. (2021). The relative effects of giving versus receiving comments on students' revision in an EFL writing class. *English Teaching & Learning*, 1–28. <https://doi.org/10.1007/s42321-021-00094-2>
- 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.
- Papi, M., Rios, A., Pelt, H., & Ozdemir, E. (2019). Feedback-seeking behavior in language learning: Basic components and motivational antecedent. *The Modern Language Journal*, 103, 1. <https://doi.org/10.1111/modl.12538>
- Patchan, M. M., & Schunn, C. D. (2015). Understanding the benefits of providing peer feedback: How students respond to peers' texts of varying quality. *Instructional Science*, 43(5), 591–614.
- Patchan, M. M., Schunn, C. D., & Correnti, R. (2016). The nature of feedback: how feedback features affect students' implementation rate and quality of revisions. *Journal of Educational Psychology*, 108(8), 1098–1120.
- Scardamalia, M., & Bereiter, C. (1983). The development of evaluative, diagnostic, and remedial capabilities in children's composing. In M. Martlew (Ed.), *The psychology of written language: A developmental approach*. London: John Wiley and Sons.
- Schunn, C., & Wu, Y. (2019). The learning science of multi-peer feedback for EFL students. *Technology-Enhanced Foreign Language Education*, 189(5), 13–21.
- Su, W., & Huang, A. (2021). More enjoyable to give or to receive? Exploring students' emotional status in their peer feedback of academic writing. *Assessment & Evaluation in Higher Education*, 47, 1005–1015.
- Tian, L., & Zhou, Y. (2020). Learner engagement with automated feedback, peer feedback and teacher feedback in an online EFL writing context. *System*, 91, Article 102247.
- Topping, K. J. (2003). Self and peer assessment in school and university: Reliability, validity, and utility. In M. Segers, F. Dochy, & E. Cascallar (Eds.), *Optimising new modes of assessment: In search of qualities and standards* (pp. 55–87). Dordrecht: Kluwer.
- Tsao, J.-J. (2021). Effects of EFL learners' L2 writing self-efficacy on engagement with written corrective feedback. *Asia-Pacific Education Researcher*, 30(6), 575–584.
- Vuogan, A., & Li, S. (2022). Examining the effectiveness of peer feedback in second language writing: A meta-analysis. *Tesol Quarterly*. <https://doi.org/10.1002/tesq.3178>
- Wang, W. (2014). Students' perceptions of rubric-referenced peer feedback on EFL writing: A longitudinal inquiry. *Assessing Writing*, 19, 80–96.
- Wang, L., & Lee, I. (2021). L2 learners' agentic engagement in an assessment as learning-focused writing classroom. *Assessing Writing*, 50, Article 100571.
- Wei, W., Sun, Y., & Xu, Y. (2020). Investigating the impact of increased student feedback literacy level on their expectations on university teachers' feedback. *Assessment and Evaluation in Higher Education*, 46(7), 1092–1103.
- Wen, M. L., & Tsai, C. C. (2008). Online peer assessment in an in-service science and mathematics teacher education course. *Teaching in Higher Education*, 13(1), 55–67.
- Winstone, N., & Carless, D. (2020). *Designing effective feedback processes in higher education: A learning-focused approach*. New York: Routledge.
- Wong, Z. Y., & Liem, G. A. D. (2021). Student engagement: Current state of the construct, conceptual refinement, and future research directions. *Educational Psychology Review*, 1–32.
- Wu, Y., & Schunn, C. D. (2021). The effects of providing and receiving peer feedback on writing performance and learning of secondary school students. *American Educational Research Journal*, 58(3), 492–526.
- Xu, Y., & Carless, D. (2017). 'Only true friends could be cruelly honest': Cognitive scaffolding and social-affective support in teacher feedback literacy. *Assessment & Evaluation in Higher Education*, 42(7), 1082–1094.
- Yu, S. (2019). Learning from giving peer feedback on postgraduate theses: Voices from master's students in the Macau EFL context. *Assessing Writing*, 40, 42–52.
- Yu, S. (2021). Giving genre-based peer feedback in academic writing: Sources of knowledge and Skills, difficulties and challenges. *Assessment & Evaluation in Higher Education*, 46(1), 36–53.
- Yu, S., & Liu, C. (2021). Improving student feedback literacy in academic writing: An evidence-based framework. *Assessing Writing*, 48, Article 100525.
- Yu, S., Zhang, Y., Zheng, Y., Yuan, K., & Zhang, L. (2019). Understanding student engagement with peer feedback on master's theses: A Macau study. *Assessment & Evaluation in Higher Education*, 44(1), 50–65.
- Zhang, F., Li, W., Long, M., & Gao, Y. (2019). A comparative study of the learning effects of self-regulated writing through three technology-enhanced learning platforms. *Technology-Enhanced Foreign Language Education*, 189(5), 22–26.
- Zhang, F., Schunn, C. D., Li, W., & Long, M. (2020). Changes in the reliability and validity of peer assessment across the college years. *Assessment & Evaluation in Higher Education*, 45(8), 1073–1087.
- Zhou, J., Zheng, Y., & Tai, J. H.-M. (2019). Grudges and gratitude: The social-affective impacts of peer assessment. *Assessment & Evaluation in Higher Education*, 45(3), 345–358.
- Zong, Z., Schunn, C. D., & Wang, Y. (2021a). What aspects of online peer feedback robustly predict growth in students' task performance. *Computers in Human Behavior*, 124, 106924.
- Zong, Z., Schunn, C. D., & Wang, Y. (2021b). Learning to improve the quality peer feedback through experience with peer feedback. *Assessment & Evaluation in Higher Education*, 46(6), 973–992.
- Zong, Z., Schunn, C. D., & Wang, Y. (2022). Do experiences of interactional inequality predict lower depth of future student participation in peer review? *Computers in Human Behavior*, 127, 107056.
- Zou, Y., Schunn, C. D., Wang, Y., & Zhang, F. (2018). Student attitudes that predict participation in peer assessment. *Assessment & Evaluation in Higher Education*, 43(5), 800–811.

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