

Original Paper

The Effect of Cognitive Feedback on Improving Unity of Essays in Peer Review of English Expository Writing

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Abstract

Drawing upon the peer scaffolding theory and the monitoring hypothesis, this study investigates how cognitive feedback during peer review sessions on the Peerceptiv platform affects the coherence of English expository essays. Specifically, it examines the impact of cognitive feedback on enhancing the integration of essays and the alignment between topic sentences and both the overarching topic and supporting examples. The findings reveal that cognitive feedback significantly contributes to the revision process by fostering greater unity within essays. It also enhances the connection between topic sentences and their respective topics and examples, thereby improving the overall relevance and quality of the essays.

Keywords

peer review, English writing, cognitive comment, unity, English major

1. Introduction

The transition from an "outcome approach," which focuses on the final product of writing, to a "process approach," emphasizing the stages of writing development, has marked a significant shift in second language writing instruction and research. This shift has spotlighted peer review as a collaborative activity where students engage in critical reading and provide constructive feedback or suggestions for revisions to their peers' writings. Peer review not only fosters learner autonomy and reader awareness (Villamil & De Guerrero, 1998) but also stimulates motivation (Cai, 2011), reduces anxiety (Jiang, 2005), boosts confidence in writing (Tsui & Ng, 2017), and supports the development of social, cognitive, and metacognitive skills (Yu & Hu, 2017).

Despite peer review's growing popularity, there is still ambiguity regarding which types of feedback are most effective and how these feedback influence the improvement of writing (Gao, 2019), particularly concerning essay unity—a critical aspect of expository writing that encompasses the coherence

between the topic, topic sentence, and supporting examples. Recent studies have primarily explored the general types and effects of feedback, revealing a positive correlation between feedback and improvements in text revision. However, the specific impact of different types of feedback on enhancing the unity of expository essays remains under explored.

This study aims to bridge this gap by focusing on the expository writings of English majors, along with their peer feedback. Utilizing the peer feedback process model, we delve into how feedback are adopted by writers and their subsequent effect on text revision. Our objectives are to identify the types of feedback most likely to be adopted, determine which feedback positively influence essay quality, and offer insights into providing valuable feedback. Through this analysis, we seek to contribute to the understanding of effective peer review practices in second language writing instruction.

2. Theoretical Foundation

2.1 Peer Scaffolding Theory

Scaffolding, a concept deeply rooted in the Vygotskian theory of the Zone of Proximal Development (ZPD), highlights the crucial role of guidance and support in bridging the gap between a learner's current abilities and their potential development. This theory underscores the significance of interactive learning, where knowledge is co-constructed through social interaction, facilitating a transformative understanding in both teaching and learning contexts.

Incorporating this foundational principle, the current study leverages online peer review as a practical application of scaffolding in the educational process. Through this approach, students receive constructive feedback from their peers, which serves to illuminate the weaknesses in their essays. This external perspective not only aids students in recognizing areas for improvement but also encourages them to refine their work, ultimately enhancing the coherence and unity of their essays. By engaging in this iterative process of reflection and revision, learners actively participate in their developmental journey within the ZPD, exemplifying the dynamic nature of scaffolding in educational settings.

2.2 Monitoring Hypothesis

Krashen's Monitoring Hypothesis (1985) posits that language learners utilize their consciously acquired grammatical knowledge to oversee and regulate their linguistic output. This self-monitoring process enables learners to correct errors in their speech or writing, functioning as an internal editor that refines their language use. In the context of peer review, this hypothesis gains practical application; it transforms into a process where students actively engage in the conscious acquisition and application of knowledge. Through the constructive feedback received from peers, learners are prompted to critically evaluate and revise their essays, focusing on enhancing aspects such as coherence and unity. This iterative process of receiving, reflecting upon, and acting on peer feedback mirrors the monitoring function, as students utilize their acquired knowledge to improve the quality of their written work, thereby potentially elevating their academic performance. By incorporating peer review into the

learning environment, educators can facilitate a dynamic platform for students to apply their theoretical understanding in a practical setting, fostering a deeper engagement with the material and encouraging a more refined linguistic output.

2.3 Classification of Comment Types

Nelson & Schunn (2009) identified five types of peer feedback: summarizing, explaining, providing specific feedback, determining the scope of feedback, and using affective language. Building on this framework, Wu and Schunn (2020) further distilled peer feedback into two primary categories: cognitive and affective. Cognitive feedback encompass actions such as identifying issues, highlighting specific problems, suggesting solutions, and offering advice. Conversely, affective feedback typically involve expressions of encouragement or vague praise. Despite the potential value of affective feedback, it often proves challenging to implement effectively and may not directly facilitate essay revisions. Consequently, this study narrows its focus to examining the impact of cognitive feedback on enhancing the unity of essays. By concentrating on cognitive feedback, we aim to discern its specific contributions to refining students' writing, particularly in terms of structuring coherent and unified essays.

3. Research Design

3.1 Research Questions

- A. Among peers, what types of feedback were exchanged, and how can these feedback be categorized?
- B. Which types of peer feedback were most frequently adopted by recipients?
- C. How do cognitive feedback specifically influence the improvement of essay unity in student writing?

3.2 Research Tools

The primary research tool used in this study was the Peerceptiv website. Peerceptiv is an advanced computer-assisted peer evaluation platform initiated in 2002. It operates as a research-based system that dynamically enhances its automated evaluation capabilities by integrating continuous intelligence. This system is specifically tailored for the pedagogy of writing across various disciplines, embracing the latest educational methodologies and software innovations.

Peerceptiv has been extensively deployed in academic English writing courses across a broad spectrum of countries including the United States, Canada, Australia, South Korea, Singapore, and Estonia. Its contribution to elevating both the quality and volume of disciplinary English writing has been profound and invaluable. Through over a decade of meticulous research and iterative testing, the Peerceptiv Writing Mutual Assessment System has crystallized four pivotal elements of instructional design. These are: the implementation of anonymous peer assessments, the incorporation of structured evaluation criteria, the facilitation of reciprocal feedback, and the enhancement of scoring precision. Collectively, these components underscore Peerceptiv's commitment to fostering an environment conducive to comprehensive writing improvement and learning.

3.3 Research Subjects

The students who participated in this study were 34 students in a sophomore class of English major in a university in Jilin Province and two first-year graduate students of disciplinary English. A total of 36 students, roughly 19-23 years old. Among them, 5 were male and 29 were female. Prior to conducting the study, 11 weeks of training in an English expository writing course had been conducted. This study was the first time they conducted online peer assessment.

The topic of this research is “An attractive job” and the style is expository writing. Choose a job that they find attractive and write an expository essay in 200-350 words about it. Explain why they find the job attractive (salary, creativity, job stability, work-life balance, the opportunity to make a difference in people’s lives...). Submit the PDF file by the deadline. Finally, removing students who did not complete the assignment, a total of 32 students' essays were collected, two each, for a total of 64 essays. Removing the second feedback with low quality first feedback, a total of 56 UNITY-related feedback were collected.

3.4 Research Process

3.4.1 Process

Phase 1: Writing

Students completed the writing task by the deadline as required and submitted the PDF file to the peerceptiv website.

Stage 2: Peer review

Each student was randomly assigned to evaluate the expository essays of 2-3 classmates according to the system, and the evaluation consisted of scoring the classmates' expository essays according to the scoring criteria stipulated by the system and giving a comment. In this study, only the scores of Topic Sentence and Relevance were taken, as well as the feedback of the UNITY section. At the same time, each student's essay will also be evaluated by 2-3 students randomly assigned by the system.

Stage 3: Back Evaluation and Revision

Students will score their peers' evaluations and give responses to their peers' feedback. Revise and upload the article for the second time.

Stage 4: Re-evaluation

Repeat Stage 2, evaluating the revised essays.

Stage 5: Re-evaluation

Classmates score peer evaluations and give responses to their peers' feedback.

3.4.2 Evaluation criteria

Evaluation criteria of Unity:

Does the writing have a strongly stated topic sentence that illustrates the career the author is going to discuss?

Are examples relevant to the topic sentence? Are sentences in each example relevant to the example?

scoring criteria of Topic sentence:

Does the writing have a strongly stated topic sentence that illustrates the career the author is going to discuss?

7: Excellent. The writing has a strongly stated topic sentence that illustrates the career the author is going to discuss.

6: Very good <between excellent and good>

5: Good. The writing has a stated topic sentence that illustrates the career the author is going to discuss.

4: Almost good <between good and OK>

3: OK. The writing has no topic sentence but has a career throughout the writing.

2: Almost OK <between OK and not at all>

1: Not at all. The writing has no topic sentence and no career throughout the writing.

scoring criteria of relevance:

Are examples relevant to the topic sentence?

7: Excellent. All examples are relevant to the topic sentence.

6: Very good <between excellent and good>

5: Good. Most examples are relevant to the topic sentence.

4: Almost good <between good and OK>

3: OK. Some examples are relevant to the topic sentence.

2: Almost OK <between OK and not at all>

1: Not at all. No examples are relevant to the topic sentence.

Are sentences in each example relevant to the example?

7: Excellent. All sentences in each example are relevant to the example.

6: Very good <between excellent and good>

5: Good. Most sentences in each example are relevant to the example.

4: Almost good <between good and OK>

3: OK. Some sentences in each example are relevant to the example.

2: Almost OK <between OK and not at all>

1: Not at all. No sentences in each example are relevant to the example.

3.4.3 Labeling of feedback

Referring to the classification and labeling of the collected cognitive feedback by Wu and Schunn (2020), there are mainly four kinds of feedback: pointing out problems, locating problems, suggesting, and giving solutions.

Cognitive Feedback

dimension	sub-item	example
pointing out problems	Point out problems with aspects of an essay.	It doesn't illustrate the charming of the pilot. It only introduce the job.
locating problems	Point out the specific location of questions in an essay.	The viewpoint in the 2nd paragraph is not prominent.
suggesting	Suggest general modifications.	I think the author can add more clear keywords to describe and give examples of the characteristics of the teachers.
giving solutions	Give concrete solutions to problems.	Maybe the "different people have different ideas" should be deleted.

4. Results

4.1 Analysis of Mutual Evaluation Feedback

Among the 56 feedback gathered that pertained to the unity of essays, the majority were focused on identifying issues and making suggestions, while offering solutions constituted the smallest portion. It was observed that peers were more inclined to highlight problems and propose suggestions rather than provide direct solutions.

Regarding the rate of adoption, feedback that offered solutions and identified problems were more frequently adopted, with both categories exceeding a 60% adoption rate. This suggests that a more comprehensive evaluation of the essay significantly enhances the likelihood of comment adoption.

Types of feedback number	Number of feedback	Number of adoption	Adoption rate
Pointing out problems	33	13	39%
Locating problems	18	11	61%
Giving solutions	6	4	67%
suggesting	25	11	44%
Total feedback	56	27	48%

Of course, a significant portion of the evaluations given by classmates contain more than one type of comment, and a significant portion contain two or more types of feedback, which are hybrid feedback. Hybrid feedback can increase comment adoption but are not as effective.

Types of feedback number	Number of feedback	Number of adoption	Adoption rate
single-type feedback	30	14	47%
Hybrid feedback	26	13	50%

4.2 Analysis of Mutual Assessment Scores

On average, the scores for TOPIC SENTENCE improved by 0.65 points in the second review compared to the first, while the scores for RELEVANCE saw an average increase of 0.37 points.

Regarding the feedback that were adopted, those that identified problems were effective in increasing scores. However, the feedback that were more frequently adopted, specifically those offering solutions and pinpointing problems, did not significantly impact score improvement.

Average increase in score for adopted feedback

Types of feedback	Increasing scores of	Increasing scores of	On
	TOPIC SENTENCE	RELEVANCE	average
Giving solutions	0.49	0.5	0.495
Pointing out problems	1.07	0.55	0.81
Locating problems	0.49	0.5	0.495
suggesting	0.57	0.52	0.545
On average	0.66	0.52	0.58625

5. Summary

In this peer review study of English expository writing, we identified that students primarily provided two types of feedback: cognitive and affective. Cognitive feedback, which are categorized into four main types: identifying problems, locating issues, making suggestions, and offering solutions, were more readily adopted than affective feedback, which mainly included praise and criticism. Despite affective feedback being more challenging to adopt in practice, cognitive feedback demonstrated a higher adoption rate.

Cognitive feedback effectively encouraged students to revise the consistency of their essays, enhance the relevance between topic sentences and the topics, as well as between topic sentences and examples. Furthermore, these feedback contributed to an increase in scores related to relevance and improved the overall quality of the essays. Specifically, feedback that offered solutions and located problems significantly increased the adoption rate, although their impact on score improvement was not significant. In contrast, feedback that posed problems did not increase adoption rates but did significantly elevate scores. Compared to single-type feedback, mixed-type feedback were able to increase adoption rates, but the increase was not significant.

However, this study has certain limitations, such as a small sample size and different evaluators for the first and second mutual evaluations, which may affect the interpretation of the research results. Future research should consider these limitations to more accurately understand the impact of peer review on English writing instruction.

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