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A Case Study of Learner Engagement of English Learners with Different Language Proficiency in a Multiple Feedback Environment

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Abstract: Based on Ellis's three-dimensional learner engagement framework, this study examined the learner engagement in multiple feedback of nine second language learners with different language proficiency through writing texts, retrospective interviews, and semi-structured interviews. It was found that (1) learners generally have a positive attitude towards multiple feedback; they experience positive emotions while negative emotions such as disappointment, doubtful, angry, guilty are also generated in the process of revision; learners tend to absorb more teacher feedback and more meaning-level feedback and they are relatively poor at self-regulated learning. (2) Language proficiency has an effect on learner engagement, with a more significant effect for lower-level learners. Learners with lower language proficiency tend to be opposed to multiple feedback and show lower behavioral and cognitive engagement. (3) There is a correlation between the three dimensions of learner feedback engagement: Affective engagement influences behavioral and cognitive engagement, and the behavioral engagement is inspired by learners' cognitive engagement. This study provides insights into the implementation of multiple feedback and second language writing, which is beneficial to the cultivation of second language talents in the new era.

Keywords: English Writing; Multiple Feedback; Learner Engagement

1. Introduction

Feedback, as an important section in EFL teaching, has received extensive attention in the field of EFL writing. Recently, peer feedback and online feedback have been introduced into the field of EFL writing as supplements to traditional teacher feedback and multiple feedback research receives growing attention. Multiple feedback provides suggestions for students' compositions, content and structure,[1] nonetheless, the success of the learning and the effectiveness of the feedback also relies upon the learner engagement that learners engage in the learning process.[2]

Learner engagement, also known as student engagement, refers to how learners process feedback they have received. Recently, feedback mode in tertiary education has shift the way from the teacher-centered to students-centered, which leads to the phenomenon that learner engagement into feedback and self-regulated learning is valued more than the feedback itself. However, the engagement in multiple feedback received little attention, and even less is known about learner engagement of learners with different language proficiency. In view of this, the present study adopts a case study approach to explore nine college students' learner engagement in multiple feedback and to reveal the role of multiple feedback on learners' writing development. This study aims to reveal the complexity of learners' multiple feedback engagement and to promote more effective utilization of multiple feedback, so as to facilitate the improvement of students' second language writing.

2. Literature Review

2.1 The Concept of Learner Engagement and its Dimension

Learner engagement, derived from educational psychology, is also known as student involvement. From educational psychology perspective, Fredricks *et al*., proposed the framework of learner engagement,

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namely, behavioral engagement, affective engagement and cognitive engagement.[3] Behavioral engagement refers to the degree of student participation in school activities, affective engagement refers to students' emotional response in the classroom, and cognitive engagement refers to the amount of effort student put into understanding complex ideas and mastery of skills. Ellis introduced the concept of learner engagement into the field of L2 teaching and learning, defining it as L2 learners' responses to feedback from three dimensions: cognitive, behavioral, and affective, with finer dimensions developed under each dimension: the affective dimension refers to the learner's emotional and attitudinal responses to feedback,[4] which encompasses the learner's overall attitude towards the feedback as well as the emotional response to the feedback; behavioral engagement refers to learners' behavioral response to feedback,[4] which can be detected by the time duration of revision,[5] feedback absorption rate,[6] and revision behavior;[6] cognitive engagement refers to the learner's psychological effort invested in feedback process, primarily encompassing the understanding of feedback, cognitive strategies and metacognitive strategies.[7]

Based on the learner engagement from Ellis, this study defines learner engagement as the learner's participation and performance in feedback, investigating affective engagement from learners' general attitude and immediate emotional response, behavioral engagement in terms of feedback absorption rate, and cognitive engagement in terms of cognitive and metacognitive strategies adopted by learners when they receiving feedback.

2.2 Feedback Engagement Studies in EFL Writing

Learner engagement has become a hot research topic in the field of second language writing, centered on the following two aspects: the study of some specific dimension in the three-dimensional learner engagement and the study on learner engagement from different sources of feedback.

In terms of the specific dimension of learner engagement, learners' cognitive processing,[8] emotional response[9] and feedback revision rate[10] have received extensive attention. Researchers have found that there is significant individual variability in learners' cognitive, emotional, and behavioral aspects. However, aforementioned studies are centered on one dimension of learner engagement, failing to consider the complexity of learner engagement and the intertwined characteristic between the dimensions into consideration. Meanwhile, scholars have examined leaner engagement in teacher feedback, peer feedback, and automated feedback environments respectively. Earlier studies focused on learner engagement to traditional teacher feedback.[7] Subsequently, peer feedback and online feedback have received attention, e.g. Fan & Xu investigated 12 learners' engagement to peer feedback and found that learners' engagement varied with the feedback type,[11] and Zhang investigated learner's engagement with automated feedback and found that improvement in writing performance only occurred when the learner had a high level of engagement with the content-level feedback.[12] Among the few multiple feedback studies, Tian & Zhou investigated five sophomore students' learner engagement with automated, peer, and teacher feedback and proved that the level of learner engagement varied with the source of the feedback.[4] Shi found that both the amount of feedback and the learner's feedback uptake rate varied by essay genre in a multiple feedback environment.[13] The studies suggested that learner engagement is influenced by individual factors such as learners' language proficiency, writing beliefs and past experiences. Nevertheless, few researchers have examined learner engagement in multiple feedback of learners with different language proficiency. In view of this, this paper relies on Ellis's learner engagement framework and adopts a case study approach to analyze the cognitive, affective, and behavioral engagement of learners with different language proficiency in multiple feedback, with a view to summarize the general pattern of learners' performance in multiple feedback, which provides a helpful guide for the improvement of the feedback method and teachers' English teaching.

3. Research Design

3.1 Research Questions

Employing Ellis's learner engagement framework,[2] this study investigates students' learner engagement with different language proficiency, the research questions are as follows:

(1) How do leaners engage in multiple feedback affectively, behaviorally and cognitively?

(2) How do learners with different language proficiency engage in multiple feedback?

(3) How do the three dimensions of learner engagement intertwine with each other?

3.2 Research Participants

The current study was carried out in an Advanced English Writing Course for freshman with duration of 11 weeks in a Chinese polytechnic university in Beijing. The course was taught by an experienced instructor, with the researcher as a teaching assistant. Extracurricular writing exercises were conducted every two weeks. The researcher conducted a writing test (total score 100) at the beginning of the semester. Based on the grade results and teacher recommendation, nine students with different English proficiency who voluntarily participated in the study were selected and divided into relative groups based on their scores, namely, higher, medium and lower level learners. Notably, none of the nine participants had prior experience with multiple feedback. In order to protect their information, pseudonyms are used to refer to specific students.

Table 1 The Profile of Participants

Participants	Gender	Age	Score	Proficiency
S1	Female	18	92	Higher
S2	Male	17	76	Lower
S3	Male	18	89	Higher
S4	Female	17	91	Higher
S5	Male	17	85	Medium
S6	Male	18	83	Medium
S7	Male	18	72	Lower
S8	Female	17	87	Medium
S9	Male	17	76	Lower

3.3 Data Collection

The current study lasted 11 weeks and was divided into three stages. In the first stage (week 1-2), teacher gave learners a curriculum orientation instruction and peer feedback training so that they can familiar with the concept, standard and process of peer feedback. The peer feedback scale was provided which functions as the evaluation criteria. Based on the scale, participants evaluated the sample essays in class, and teachers and researchers helped them solve the difficulties they encountered during the process. In addition, Pigai.org and its operation rules are also introduced to students to help them complete the online writing assignments independently.

In the second stage (week 3-week 10), learners submitted their argumentative writing assignments to Pigai.org every two weeks, the topics of which are chosen by the teacher. Four rounds of writing tasks were prepared for learners. They went through the following process in one round within two weeks: Learners submitted the first draft to the Pigai.org and revised the draft based on the automated feedback by Pigai.org. Then peer would provide them feedback and they revised the draft again. Teacher is responsible for the final feedback. When they have finished revising the draft according to the teacher's feedback, one round writing was completed. The participants were given a semi-structured interview about 15 minutes online or offline and prompted to say whatever come to their mind as they were asked some questions prepared by the researcher to detect their engagement in multiple feedback. During the interview, the teacher presented the page of Pigai.org so that learners could see multiple feedbacks and their own revisions to recall what was going on in their minds at that time.

In the third stage, one-to-one semi-structured interviews were conducted with participants to explore some general and extra information about them. Each student was interviewed for around 20 minutes and their responses are used to further analyze their engagement. Audio-recordings were obtained with the permission of participants and the recordings were carefully transcribed with the assurance of participants.

3.4 Data Analysis

The quantitative data are the first draft and revised draft of the learner's composition, and the qualitative data are the transcript of four retrospective interviews and one semi-structured interview. The affective engagement data mainly comes from the interview, the behavioral engagement mainly comes from the text content and interview content and the cognitive engagement comes from the interview data. The following are the analysis steps:

Analysis of composition text and feedback: The revised draft of writing and the feedback received are used to analyze the feedback absorption rate. Feedback absorption rate = specific types of modifications made by students/total number of specific types of feedback. First, identify the feedback points. Each written intervention that focused on a different aspect of the text was considered a separate "feedback point".[14] According to the coding scheme of Tian & Zhou,[4] the types of feedback provided by the three feedback sources are divided into surface-level feedback and meaning-level feedback. Secondly, observe the students' revised draft to determine whether the revision was triggered by feedback.

Interview analysis: All audios were carefully transcribed into text, and NVivo software was employed to code transcribed text through circular reading and annotation of data and categorization of recurring phenomena;[15] secondly, based on the classification of previous literature, the interview content was divided into feedback emotions, cognitive strategies and metacognitive strategies. Finally, based on qualitative data, repeated comparisons were made between cases and general patterns were summarized.

4. Results

The researcher has examined the learner engagement of learner with different language proficiency. The following section will analyze the learner engagement from affective, behavioral and cognitive dimensions.

4.1 Affective Engagement

Affective engagement is reflected by the learner's overall attitude toward feedback and the emotional responses when receiving feedback. The overall attitude of the nine students towards multiple feedback can be divided into supportive (S1, S3, S5, S6, S9), neutral (S4, S8) and oppositional (S2, S7).

Supporters believed that these three feedback methods have their own advantages, and the employment of them in combination improves the breadth and depth of the composition and achieve optimal results. For example, S1 said:

> "High school teachers provided us a grade, but I didn't know where my mistake was and dare not to ask teacher. However, under the multiple-feedback mode, I am so glad that I am accessible to my writing deficiencies from multiple sources and also enjoy being a "writing judge" for my classmates. I am so willing to revise my composition due to a sense of accomplishment." (S1, Semi-structured interview)

The neutral learners believed that multiple feedback did not bring them any benefit. S4 mentioned in the third retrospective interview, "I think composition requires us to accumulate some words, but relying on corrections from teachers and classmates is invalid." Opponents expressed their distaste for multiple feedback. S2 believed "It's too troublesome to use this method. After the novelty wears off, I don't want to write anymore." S7 also felt that "multiple feedback was a waste of time." He believed that memorize the template for English composition is the best way to improve the writing quality.

Table 2 Coding Results of Learners' Affective Engagement

Categories		Sources	Coding Frequency	Example
Positive Emotions	Satisfactory	S1, S3, S4, S5, S6, S7, S8, S9	82	I think his feedback is more authentic. (S3)
	Excitement	S1, S5, S6	3	I think the online feedback is very novel. (S4)
	Gratitude	S3, S8	4	This guy is so serious. (S8)
	Pride	S3, S7	2	He praised me for my excellent words. (S6)
Negative Emotions	Disappointment	S1, S2, S4, S5, S7, S8, S9	13	I think what the teacher said is not amazing enough. (S2)
	Doubtful	S1, S2, S4, S5, S7, S8, S9	11	What evaluation criteria of Pigai.org. (S4)
	Angry	S1, S4, S8	4	His comments contain no helpful information. (S4)
	Guilty	S1, S2, S3, S7	6	I feel sorry for wasting him so much time. (S7)
	Confused	S1, S2, S4, S5, S6, S8	26	How do I correct Chinglish words? (S1)
	Frustrated	S3, S8	2	Why does the score keep getting lower and lower? (S3)

Regarding feedback emotions, learners showed complicated emotions when receiving feedback, including positive emotions such as satisfactory, excited, gratitude, pride etc., and negative emotions such as disappointment, doubtful, angry, guilty, confused, frustrated etc. Learners believed that the feedbacks from Pigai.org are very detailed, but they usually do not have any specific emotions after receiving feedback from Pigai.org. S4, S5, and S9 said that the Pigai.org could only detect some grammatical errors and they just modified their errors mechanically without any other feelings. However, automatic feedback leads to the confusion among students. For example, S3 recalled: "Pigai.org provided me with the 'Chinglish sentence'. I don't know how to identify Chinglish words at all". At the same time, the grammar-focused mode of Picai.org made learners feel disappointment. For example, S4 said, "I think Pipai.org is just for the sake of correction and does not train our writing and thinking ability at all." S1 also criticized the thoughtless output of Pigai.org.

Compared with the Pigai.org, peer feedback and teacher feedback stimulated more emotional reactions among students. Satisfaction is the most common emotional reaction among learners when receiving feedback. Writing ideas provided by teachers and peers can best stimulate learners' satisfaction. For example, S1 said: "My classmates suggested that I analyze the reasons for excessive packaging from other angles. I am very satisfied with this point because I talked too much about mooncake packaging in my essay". S4 also believed that teachers' comments would be satisfactory. It can be seen that when students' self-assessed value of the composition is lower than the value brought by revision, students will be satisfied with the feedback. Nonetheless, learners also experience more complicated negative emotions when receiving feedback. The ambiguity of feedback from peers and teachers bring confusion to students, such as S6, "My classmates said that my discussion of global warming was unclear and advised me to highlight the essence, but what is the essence?" S7 also stated that she did not understand what the "logic sentence" meant in feedback. In terms of teacher's feedback, S1, S3 and S6 all said that they are perplexed about how to interpret the "Chinglish" that the teacher evaluated, which affected their subsequent understanding and composition revision. In addition, when it comes to peer feedback, students are inclined to doubt its correctness and question their peers' feedback capabilities. The attitudes and expressions of peers are more likely to arouse students' anger. For example, S1 complained:

> "He said that my article is like a composition written by primary school students, His remark made me feel speechless. I think I was humiliated because I don't think my composition is so rudimentary. As an evaluator, he shouldn't be so contemptuous." (S1, the first interview)

Depending on the engagement of learners with different language proficiency, it can be seen that high-level leaners held a supportive or neutral attitude toward multiple feedbacks, and they produced more types of emotional experiences. S2 and S7, who have relatively low English proficiency, are opposed to multiple feedback, which reflects to a certain extent that higher-level learners have greater emotional engagement than lower-level learners. And students of all levels have negative emotions, which suggest that teachers urgently need to understand the reasons why learners generate negative emotions, so as to guide students to resolve negative emotions.

4.2 Behavioral Engagement

Behavioral engagement refers to the learner's behavioral response to feedback, which is mainly reflected by students' absorption rate of feedback. According to the coding scheme of Tian & Zhou,[4] the types of feedback provided by the three feedback sources are divided into surface-level feedback and meaning-level feedback. Surface-level feedback refers to feedback that does not cause changes in meaning, such as synonym exchanges, grammatical problems, and changes in paragraph structure. etc., and meaning-level feedback will cause changes, increases or decreases in the meaning of words, sentences, paragraphs, etc.

Table 3 The Incorporation Rate of Multiple Feedback

Types			Automated Feedback			Peer Feedback			Teacher Feedback			Total		
			Total	Absorbed	Rate	Total	Absorbed	Rate	Total	Absorbed	Rate	Total	Absorbed	Rate
Surface Level	Meaning Reservation	Vocabulary	46	28	60.9%	18	12	67.7%	9	9	100%	73	49	67.1%
		Sentences	0	0	0	7	4	57.1%	9	6	66.7%	16	10	62.5%
		Paragraphs	0	0	0	0	0	0	3	3	100%	3	3	100%
	Grammar		107	68	63.6%	33	25	75.8%	4	4	100%	144	97	67.4%
	Format		125	6	4.8%	2	2	100%	0	0	0	127	8	6.3%
	Total		278	102	36.7%	60	43	71.7%	25	22	88%	363	167	46%
Meaning Level	Meaning-altering	Words	0	0	0	17	7	41.2%	16	14	87.5%	33	21	63.6%
		Sentences	0	0	0	25	16	64%	22	17	77.3%	47	33	70.2%
		Paragraphs	0	0	0	19	7	36.8%	35	18	51.4%	54	25	46.3%
	Total		0	0	0	61	30	49.2%	73	49	67.1%	134	79	59%
Total			278	102	36.7%	125	73	60.3%	98	71	72.4%	497	246	49.5%

As shown in Table 3, nine learners received a total of 491 pieces of feedback in four feedbacks. Among them, Pigai.org provided the largest number of feedbacks (278 pieces), but its feedback absorption rate was the lowest (36.7%), followed by peer feedback (121 pieces), the absorption rate was 60.3%. Although the number of teacher feedback is the lowest (98 pieces), its absorption rate is the highest (72.4%). Notably, the feedback provided by the Pigai.org is all surface-level feedback, mainly targeting at vocabulary, grammar and format. Among them, format issues are the least absorbed, with a revision rate of only 4.8%, reflecting students' neglect of format issues. The surface-level feedback and meaning-level feedback provided by peer feedback are relatively evenly distributed, but the absorption rate of surface-level feedback (71.7%) is greater than that of meaning-level feedback (49.2%), and in meaning-level feedback, the modification rate at the paragraph level (36.8%) is much lower than vocabulary (41.2%) and sentence (64%) levels. In terms of teacher feedback, meaning-level feedback is in sharp contrast to surface-level feedback: meaning-level feedback is nearly twice as much as surface-level feedback. It is worth noting that, consistent with peer feedback, the revision rate at the paragraph level (51.4%) in meaning-level feedback is also lower than at the vocabulary level (51.4%) and sentence level (77.3%).

Table 4 Adoption Rate of Multiple Feedback from Learners with Different Levels

Language Proficiency	Learners	Automated Feedback			Peer Feedback			Teacher Feedback			Total		
		Total	Absorbed	Rate	Total	Absorbed	Rate	Total	Absorbed	Rate	Total	Absorbed	Rate
Higher	S1	24	18	75%	22	17	77.3%	9	9	100%	55	44	80%
	S3	13	5	38.5%	24	19	79.2%	10	7	70%	47	31	66%
	S4	43	20	46.5%	9	4	44.4%	12	10	83.3%	64	34	53.1%
Medium	S5	36	12	33.3%	12	9	75%	7	6	85.7%	55	27	49.1%
	S6	33	19	57.6%	7	6	85.7%	13	11	84.6%	53	36	67.9%
	S8	28	12	42.9%	7	4	57.1%	15	13	86.7%	50	29	58%
Lower	S2	11	5	45.5%	12	6	50%	6	4	66.7%	29	15	51.7%
	S7	49	3	6.1%	14	0	0	19	7	36.8%	82	10	12.2%
	S9	41	8	19.5%	14	8	57.1%	7	4	57.1%	62	20	32.3%
	Total	278	102	36.7%	121	73	60.3%	98	71	72.4%	497	246	49.5 %

Judging from the feedback absorption rate of learners with different language proficiency, except for S5, the overall adoption rate of higher-level and medium-level learners is more than 50%, while the adoption rate of lower-level learners is relatively low. Moreover, there is a phenomenon of non-adoption by learners. For example, S7, as a lower-level learner, did not incorporate any peer feedback. He believed that "the feedback given by peers is not trustworthy due to their uneven proficiency" In addition to the feedback modification rate, spontaneous modification also reflecting students' behavioral investment, multiple feedback triggers more self-modification among higher and medium-level learners.

4.3 Cognitive Engagement

The core of multiple feedback engagement is cognitive engagement,[8] which mainly includes cognitive strategies and metacognitive strategies. Cognitive strategies are strategies adopted by learners when modifying feedback. Metacognitive strategies refer to the reflection, planning, summarization, etc. on their own feedback actions. The following is the learners' cognitive engagement in multiple feedback.

Table 5 Coding Results of Learners' Cognitive Engagement

Categories		Sources	Frequency	Examples
Cognitive Strategies	Avoiding Repetition	S1, S3, S4, S5, S6	26	I keep repeating, and then I don't want to repeat it again. (S1)
	Linking	S1, S3, S6	8	I want to add a logical relationship. This one seems to connect more smoothly. (S6)
	Focusing on the Word Count	S1, S3, S6	7	After I finished editing, I found that the number of words exceeded, so I deleted it. (S3)
	Rereading	S1, S3, S4, S5, S8, S6	12	I read it again and it feels like it should be more vivid. (S4)
	Weighing	S9	3	If we want to simplify the meaning, the whole article would have to be completely reborn, which would be a bit troublesome. (S9)
	Contrasting	S1, S2, S3, S4, S6, S8	28	I compared the words we used and it was better to use his. (S1)
	Speculating	S1, S2, S3, S4, S5, S9	11	He may not know that "still" also means "however", so he asked me to change it. (S3)
Meta-cognitive Strategies	Reflecting	S1, S3, S5, S6	17	Sometimes I like to personify things, but I think this is wrong in English. (S1)
	Monitoring	S3, S2, S6, S4	9	I should finish it pretty quickly this time. (S7)
	Planning	S1, S3, S4, S9, S6	14	Because some of my classmates' feedback are wrong, so I usually wait for the teacher's comments before correcting my writing. (S4)
	Evaluating	S4, S5	5	I think I have to be more serious this time. (S4)

From the perspective of cognitive strategies, contrasting is the most commonly used cognitive strategy by leaners. They compare their own writing with other's writing to judge whether the feedback is reasonable and whether modification is necessary. For example, S4 compared the feedback of teachers and classmates to make modifications. S6 compared the beginning of his article with that of his classmates and then revise his article. Avoiding repeated words and sentence patterns is also highly valued by students. S1 said “My classmates said that I had too many sentence patterns starting with ‘I’, and in the end I replaced them with other patterns”. S3 believed that “with” appears too many times in his article and it should be revised. In addition, students will pay attention to the topic requirements again when revising. For example, S1, S3, and S6 all paid attention to the word count of the article when revising, and they deleted some sentences to meet the word count requirement of the article. Meanwhile, learners are inclined to reread the article and then revise it, thus paying attention to some issues such as contextual connection and article structure. At the same time, students found reasons for their modified behavior and speculated on the thoughts of students or teachers. From the perspective of metacognitive strategies, students generally used less metacognitive strategies, among which reflecting and planning appear most frequently. Learners are less likely to monitor and evaluate their own learning process.

From the perspective of learners with different language proficiency, high and medium level learners such as S1, S3, S5 and S6 adopt more abundant cognitive strategies and metacognitive strategies, and they tend to reflect on themselves in the process, while low level learners such as S7 and S2 show obvious insufficient cognitive and metacognitive application.

5. Discussion

This study discusses the engagement of learners with different language proficiency in multiple feedback that integrates automatic, peer, and teacher feedback. In terms of affective engagement, it is found that the majority of students show their positive attitudinal reactions and supportive attitude towards the multiple feedback, which shows that learners prefer multiple feedback to single feedback. They are not satisfied summative feedback from teacher who only provides grades to their writing, which echoes studies that mentioned the flaws of teacher feedback.[16] However, S2, S7 showed their disagreement of multiple feedback, which probably due to their lower language proficiency. The lack of language knowledge has affected his ability to process feedback deeply.[17] Due to the disagreement of second language writing, they thought multiple feedback is a waste of time, which is consistent with studies highlighting the importance of individual factors in students writing.[18] Despite the positive trend of multiple feedback, students’ emotional responses show a different picture: in terms of emotional responses, learners expressed their positive emotional responses when receiving feedback such as satisfactory, excitement, gratitude and pride. Different from previous researches,[4] this study found learners generate more complicated negative responses towards multiple feedback such as disappointment, doubt, anger, etc, which intertwines with a serious of factors such as mechanism of Pigai.org, feedback quality, peer’s attitude, trustworthiness of peers and peers’ attitude and so on. Among these negative factors, most of them are usually triggered by peer feedback. The clarity of peer feedback is what dissatisfies them the most, which is reported in some previous studies,[19]enlightening us about the importance of peer feedback and the cultivation of feedback literacy. In response to teacher feedback, learners were often confused by some “Chinglish” words, which signifies learners often rely on their mother tongue. Negative language transfer is a barrier that Chinese English learners find difficult to overcome, causing many English learners’ language abilities to stagnate. This indicates that the teacher needs to further explain “Chinglish problem” in the following teaching. It further indicates us both students and teacher are supposed to generate more concrete and in-depth feedback with appropriate tone to foster students’ positive emotions.

In terms of behavioral engagement, different feedback sources and types of feedback trigger students to revise their writings diversely.[20] Pigai.org focuses on the surface-level feedback such as grammar, punctuation, and spelling revisions while no meaning-level feedback was provided. It provides the most feedback while gains the lowest incorporation, which signifies the characteristic of automated feedback featuring a high number and low uptake rate. This is also reported Bai & Hu’s study that claimed the limitations of the Pigai.org. In contrast, teacher feedback is the lowest but enjoys the highest absorption.[10] This shows students’ preference towards teacher feedback, which indicates that the teacher’s authority has great impact on students’ learning.[21] Teachers have irreplaceable authority in traditional eastern teaching, and their status as the major subject of feedback is unshakable. In terms of feedback types, students surprisingly incorporate more meaning-level feedback than surface-level feedback, which shows that they are fond of meaning-level feedback in general and behaviorally engagement in multiple feedback in a deep way. At the surface-related level, format errors are rarely adopted by students but vocabulary and grammar errors are incorporated to a large extent, which is not accordance with Tian & Zhou's finding that students tend to absorb formats and grammar feedback while neglect the vocabulary problem.[4] This suggests students tend to ignore the formatting errors such as capitalization and punctuation in online writing. In the meaning-level feedback, incorporation on vocabulary and paragraph ranks the highest and lowest respectively, which probably because processing the sentence and paragraph requires more mental efforts than the vocabularies while students tend to conduct less mental effort to regulate revision.

In terms of cognitive engagement, students adopted various cognitive strategies including avoiding repetition, linking, focusing on the word count, rereading, weighing, contrasting and speculating; meta-cognitive strategies including reflecting, monitoring, planning and evaluating. However, the frequency of each strategy varied. For example, in terms of cognitive strategies, avoiding duplication is most adored by students. In terms of meta-cognitive engagement, students tend to use more reflecting strategies and planning strategies than monitoring strategies, which is not consistent with Han & Yang's finding that students employed more evaluating and monitoring strategies.[8] This signifies students spent more energy focusing on the effects of revisions and actively reflected on the deficiency of their writing and learning effects, which shows their insufficiency of self-regulatory capacity in improving their writing.[22] In general, students employed cognitive strategies more frequently than meta-cognitive strategies. This can also be found in Yu et al.'s study that all the participants seldom choose to conduct meta-cognitive due to their unwillingness to make mental efforts.[23]

Language proficiency is proved as an important factor influencing student engagement. From the perspective of learner engagement with different levels, language level has a certain impact on engagement in multiple feedback. There is not much difference in the performance between high and medium levels, while learners with lower language proficiency tend to be opposed to multiple feedback and show lower behavioral and cognitive engagement. As lower proficiency students, S2, S7 showed relatively lower engagement in multiple feedback which can be detected through negative general attitude, less emotional responses and scarce of the use of cognitive and metacognitive strategy. It can be seen that students with lower proficiency were less interested in feedback than those with higher proficiency. It also proves that language proficiency affects students' understanding, interpretation and adoption of feedback.[6] Notably, students with lower proficiency are deeply influenced by their writing beliefs. This finding suggests that writing beliefs play an important role in learners' writing and revision process.[24] For example, S7 believed that writing and memorizing templates is the simplest and most effective way. S9 and his roommates agreed that English learning is not important. This indicates that in order to improve the lower-level learners' engagement, changing their writing beliefs is a necessity.

This study also presents the interconnectedness and inconsistency of three dimension of student engagement. Firstly, affective engagement affects behavioral engagement. Learners' emotion has an impact on their reception of multiple feedback, which reflects that affective engagement predicts students' behavioral engagement. Secondly, affective engagement shapes cognitive engagement. Learners who support multiple feedback tend to use a variety of cognitive strategies and metacognitive strategies to deal with feedback. This supports the findings of Yu et al.,[23] Learners with low affective engagement put little mental effort into feedback. Thirdly, the behavioral engagement is inspired by learners' cognitive engagement. Nonetheless, it is worth noting that students show "pseudo-behavioral engagement" in the revision by deliberately show their engagement in the learning activities, which may create the illusion of high behavioral engagement. For example, S2 deleted some words in his writing deliberately without exerting any cognitive effort. Some scholars believe that learners' cognitive and emotional engagement will be expressed through behavior, so behavioral engagement can be used as an indicator of emotional and cognitive investment, which is proved unreliable by this study.[25] The reasons for the inconsistency of the three dimensions are also expected to be explored.

6. Conclusion

In conclusion, based on the analytical framework of Ellis, this study explores the learner engagement in multiple feedback among nine learners with different language proficiency. Given the malleability of student engagement, the findings provide valuable implications for improving student engagement. Firstly, it is significant for teacher to improve peer feedback training. As a link of multiple feedback, peer feedback arouses many negative emotions of students due to the clarity of feedback, peer' tone, peer's attitude and so on, which impairs students' understanding of feedback. Therefore, in future peer feedback training, in addition to the content of training feedback, more attention should be paid to emphasizing students' tone, attitude, and clarity of peer feedback in order to improve student' feedback literacy. Secondly, teachers should have a clear understanding of the emotions generated by students during the learning process and pay attention to students' emotional changes and their reasons. At the same time, it is necessary to regulate the negative emotions generated by students. Teachers can pass on some actionable emotional adjustment strategies to classmates, such as encouraging themselves to write a diary to record their emotional changes and helping students transform some negative emotions into positive motivation for revision. Thirdly, it difficult for students to regulate their mind during the feedback process, teachers can provide corresponding training to guide students in using various cognitive strategies to adjust and reflect on their learning status, promoting students' self-supervision and self-improvement. Last but not the least, automated feedback focus on some surface-level feedback, peer feedback generates more opinions and teacher feedback have a guiding role in the meaning of feedback. Teachers should inform students and disadvantages of various feedback sources, and guiding students to make reasonable use of multiple feedback. Pseudo-behavioral engagement wastes the time and energy of both students and teachers. It is necessary to provide reasonable guidance to them to get rid of pseudo-behavioral engagement. Meanwhile, this study is subject to certain limitations. Although this article collected four rounds of data, it failed to pay attention to the changing characteristics of each round of data, making it difficult to reveal the dynamicity in leaner engagement. In the future study, the changing and dynamic features should be reveled through multiple rounds of writing assignments.

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