

Original Paper

Learner Uptake with Automated Feedback and Teacher Feedback in an Online EFL Writing Context

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Received: April 9, 2023

Accepted: April 26, 2023

Online Published: April 28, 2023

doi:10.22158/selt.v11n2p43

URL: <http://dx.doi.org/10.22158/selt.v11n2p43>

Abstract

The Automated Writing Evaluation (AWE) system has garnered growing attention in recent years. It is a powerful complement to traditional teacher feedback. Drawing on the data collected from student written texts, AWE feedback, teacher feedback and student interviews in a Chinese university, this study aims to investigate the impact of man-machine feedback on the practice of teaching English writing in an online English as a foreign language (EFL) context as well as students' engagement with it. The results show that compared with teacher, AWE provides more feedback items and focuses on surface-level such as vocabulary, mechanics and grammar, while teacher pays attention to both surface-level and meaning-level, including organization, content, coherence, etc. Although there is not much difference in the uptake rate between teacher feedback and AWE feedback, the uptake rate of meaning-level feedback is much higher than surface-level feedback. Furthermore, students believe that uptake rate is influenced by various factors such as English competence, feedback quality, score, available time, personal preference, motivation, interest in English learning, and so on. Additionally, students deem that the combination of AWE feedback and teacher feedback has a positive impact on stimulating their writing enthusiasm and improving their writing abilities.

Keywords

AWE feedback, teacher feedback, uptake, engagement

1. Introduction

One of the major methods for teaching writing is to provide feedback, as it plays an important role in enhancing students' L2 writing development and scaffolding their writing processes (Biber, Nekrasova, & Horn, 2011; Black & William, 2009; Hattie & Timperley, 2007; Kellogg & Whiteford, 2009). Research on feedback in second language writing has received much attention from researchers and teachers (Ferris, 2003; Hattie & Timperley, 2007; Hyland & Hyland, 2019; Lee, 2017). However, most

research has focused on examining the impact of various types of feedback on the accuracy of grammar in students' writing and the subsequent revisions made by them (e.g., Bitchener & Storch, 2016; Lyster & Ranta, 2013; Sheen, 2007). Little attention has been paid to the critical role of students' active engagement with feedback during the revision process. Additionally, it is a common phenomenon that in Chinese college English class, there exists a summative one-way mode, which means that students usually write only one draft and then receive feedback offered by teachers. In addition, feedback often takes the form of marks or short evaluations; Students have little opportunity to be informed of teachers' "evaluation standard" and "expected performance" (Lo & Hyland, 2007). As a result, students' engagement in uptake is relatively low and teachers also know little about students' perception of feedback. To address the dilemma, this paper explores a new mode of teaching writing which combines AWE feedback and teacher feedback to enhance both the learning and teaching effects. This study aims to investigate the effects of both AWE feedback and teacher feedback on English writing, as well as students' uptake of such feedback. By comparing the first drafts and final drafts, what types of feedback AWE and the teacher provided and the degree to which students uptake that feedback are explored. Additionally, a semi-structured interview is conducted to examine students' perceptions of both types of feedback, with the aim of identifying their reasons and motivations for the uptake.

The study will expand our understanding of how AWE systems can be utilized to optimize writing outcomes and how teacher feedback and AWE feedback can be integrated to achieve better feedback outcomes. Furthermore, the study will provide pedagogical implications for L2 writing class, improving students' engagement and stimulating their writing enthusiasm.

2. Literature Review

2.1 Categorizing Feedback on Writing

In order to enhance students' writing skills, various types of feedback are given to them, such as suggestions on revisions. Feedback plays a crucial role in motivating students to edit their essays and create polished, high-quality final drafts. Previous research has extensively explored different types of feedback, including AWE feedback, teacher feedback, and peer feedback. These studies have shown that providing accurate feedback can improve the quality of English writing in an EFL context. Researchers have also examined multiple feedbacks from diverse perspectives. Evans, Hartshorn, McCollum, and Wolfersberger (2010) examine dynamic corrective feedback that teachers have adopted as an instructional teaching method to prompt students' writing ability. Zhang (2019) conducts a study to investigate the impact of combining man and machine feedback and finds that man-machine multi-source feedback is more conducive to improve students' writing quality. Through textual analysis, Hang and He (2018) discover that it is crucial to effectively integrate both machine and human feedback as this can facilitate the development of students' autonomous learning abilities.

Implementable feedback is an important link to judge the effectiveness of the interaction between learners. Although the uptake of feedback is not equivalent to the acquisition of writing skills, it indicates that learners do actively and positively participate in revising their texts and making effort to improve their compositions. Baker (2016) finds that in English writing teaching practices, with the combination of different types of feedback, students start writing their compositions earlier and abundantly revise their drafts due to the formative feedback they have received. Therefore, they can consciously pay attention to the structure, spelling and grammar of their texts and try to improve text quality. These findings indicate that blending different types of feedback in designing teaching practice holds significant promise for enhancing students' writing quality.

Although most studies have emphasized the importance of providing effective feedback, they have tended to overlook the critical role of students' active engagement with feedback during the revision process. It is worth noting that students should be viewed as active agents in their own writing, rather than passive recipients of various forms of feedback. They are the primary drivers of their own learning and development in English writing.

2.2 AWE Feedback and Teacher Feedback

The rapid advancement of modern educational technology and the widespread availability of computer networks in recent years have facilitated the extensive and effective utilization of AWE systems. These systems are capable of instantly scoring and providing diagnostic feedback on essays submitted online by students. According to Wilson and Cziki (2016), AWE system has several key advantages, including timeliness, high efficiency, and flexibility. By leveraging an AWE system, students can actively engage in the feedback and revision process, which promotes the improvement of text quality and the development of English writing skills (Kellogg, Whiteford, & Quinlan, 2010).

Despite the immediate feedback provided by AWE systems, some researchers have observed that the quality and accuracy of error identification is not on par with that of teacher feedback (Dikli & Bleyle, 2014). More specifically, AWE does benefit students in identifying mistakes on surface level, such as punctuation marks, capitalization, collocation and grammar, while it is insufficient to provide feedback in meaning-related areas, such as logic, structure and coherence.

In Chinese college EFL classrooms, teacher feedback remains the primary source of feedback for students, and therefore plays a crucial role in improving L2 writing and enhancing students' writing proficiency. Teacher feedback typically focuses on aspects such as form, organization, and content of texts, and is generally considered to be more accurate, unambiguous, targeted, and personalized compared to AWE (Chen & Cheng 2008). Zhou's (2013) research shows that teacher feedback can significantly improve students' ability to organize the structure of their essays. Furthermore, Bai and Wang (2018) discovered that teacher feedback tends to prompt more revisions in content, while AWE feedback leads to more revisions on the lexical level. In terms of text quality, teacher feedback has been found to improve the total number of words, number of verbs, number of phrasal verbs, and lexical richness, while AWE feedback is more effective in improving the proportion of academic words and the

average word length. Although the aspects discussed above demonstrate the potential differences between AWE feedback and teacher feedback, there is still some ambiguity regarding the specific and detailed ways in which they differ.

2.3 Research on Learner Uptake with Feedback

Up to now, few studies have explored learner uptake with multiple feedback sources in an online EFL writing context, in which learners can engage with multiple feedback sources through online platforms (Dressler et al., 2019). Furthermore, studies on L2 student's uptake pay attention to how students respond to different types of feedback, while students' engagement with different feedback still needs further exploring (Yu et al., 2019). Zhang and Hyland (2018) investigate how individual engage with AWE feedback and try to compare two categories of feedback while neglect students' engagement with AWE feedback.

If students are hesitant to embrace the feedback provided in a substantial manner or simply disregard it, then the potential for improving their writing skills and the quality of their written work will be greatly diminished. As a result, the supreme value in formative feedback is in its uptake and subsequent improvement of writing from first drafts to final drafts. Some researchers examine learner uptake with various types of feedback, such as AWE feedback, peer feedback and teacher feedback, learner perceptions of multiple feedback (Bai & Hu, 2017), and learner consideration behind feedback uptake (Storch & Wigglesworth, 2010). A few studies focus on the process of how students make error revisions in their essays and ignore text revisions.

The present study is designed to exploring students' engagement and uptake with AWE feedback and teacher feedback. While some students eagerly seek out feedback to enhance their writing, others may be unwilling to utilize feedback to revise their work. Therefore, it is necessary to delve deeper into the reasons behind students' decision to accept or reject feedback. Allen and Mills (2016) assumes that students' English competence would affect their uptake of feedback. There is a direct correlation between the uptake of feedback and the improvement of text revision. The enhancement of text quality is heavily reliant on how feedback is received and utilized. Moreover, the potential mediator between feedback and uptake plays a significant role in determining the effectiveness of feedback uptake (Nelson & Schunn, 2009). However, which type of feedback is more useful and will be adopted and why they are useful have not been clarified yet.

3. Methodology

3.1 Research Questions

1. What types of feedback are provided by AWE and teacher?
2. How do Chinese university EFL learners uptake AWE feedback and teacher feedback in an online context?
3. How do learners engage with AWE feedback and teacher feedback and make their uptake decisions?

3.2 Design

The thesis investigates the effects of multiple feedback uptake and students' engagement. Moreover, a semi-structured interview is adopted to further explore participants' inner views on the two ways of feedback, such as their overall viewpoint of AWE feedback and teacher feedback as well as the reasons behind their decision-making, i.e., why they accept or reject feedback in L2 writing?

With the purpose of helping students improve their essays and enhance their writing abilities, this English writing task cycle is carried out and is required to go through two stages of feedback-revision from AWE program and teacher. The AWE program is *Pigai* (<http://www.pigai.org>), an online writing platform used for intelligent correction of English compositions. It is developed by Beijing Ciku Science and Technology Co., Ltd. and it is based on the natural language processing technology and corpus technology. This system produces an overall score in real time through calculating on four aspects: vocabulary, sentence, structure and organization, and content relevance. It is simple to use, easy to operate and suitable for independent training. Moreover, it provides timely feedback and sentence by sentence feedback and end comments (Yang & Dai, 2015).

All the registered students submit their first drafts of the essay task to AWE online program; revise their drafts at least once according to AWE feedback generated by the *Pigai* program. They then submit their second drafts to *Pigai* for teacher feedback in a similar way. Students then revise their drafts according to teacher feedback in electronic version before submitting the final essay. All the feedback from AWE program to teacher are provided to the participants online.

After the writing task cycle, five students are randomly invited to participate in an interview, aiming to help us understand their perception of AWE feedback and teacher feedback. In addition, students' preference of these feedback and their suggestions on how to improve these two types of feedback in order to enhance their writing abilities are explored. More importantly, the motivation and reasons behind their decision-making process are clarified. This interview provides us with pedagogical implication on how to improve and combine AWE feedback and teacher feedback in college English writing class.

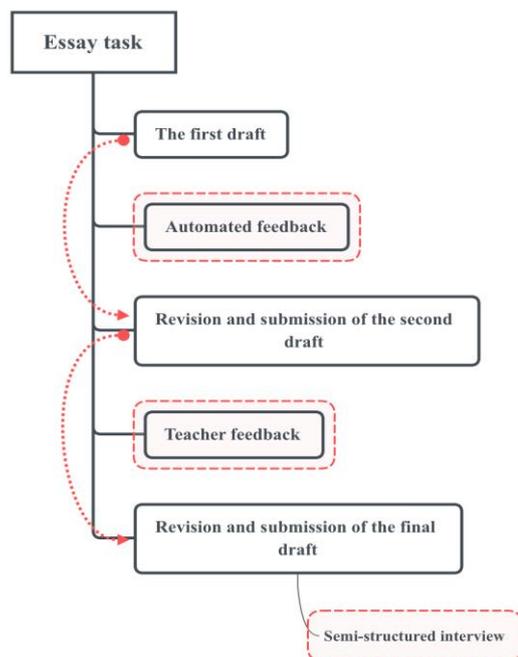


Figure 1. Essay Task Cycle

3.3 Participants

The participants are forty-one sophomores of non-English majors in a university in Shaanxi, China. In the university, non-English major students took a placement test at the beginning of their undergraduate studies and were placed into two levels, with the A level as the higher level and B level as the lower level. All participants are from level B and are taught by the same teacher in an EFL context. All the participants expressed their willingness to take part in this study at the beginning of this study. Additionally, they all attended a nation-wide College English Test and their English proficiency level is relatively low.

3.4 Instruments

3.4.1 Writing Tasks

The writing task was assigned by the teacher on *Pigai* in week 8 of last semester. The topics were in line with their teaching contents and they were: 1) *A most influential movie director or movie maker*, 2) *A man/ woman who changed the world*, 3) *A great sportsman/sportswoman*. Students can choose one of them to compose their essays. It lasted from November 19, 2020 to December 30, 2020. Students have plenty of time to revise and submit their essays.

3.4.2 Semi-structured Interview

In addition, in order to know the subjects' perception of two types of feedback on improving their English writing skills and the motivation behind their decision-making process, after the completion of writing tasks, five students were randomly selected to carry out semi-structured interviews. The guided questions were primarily developed based on the research questions and then modified in accordance with an elementary analysis of the students' written composition as well as the teacher's feedback,

AWE feedback and students' uptake of these two types of feedback. Students' motivation of English writing, opinions about writing, preference of feedback types, process of drafting and revising texts, handling with AWE feedback and teacher feedback and reasons for uptake were interviewed.

3.5 Data Collection

The data collection started in the middle of last semester and lasts for four weeks. The English teacher assigned the writing task in the eighth week on *Pigai* and students had 4 weeks to revise their essays according to the feedback offered by AWE. Then teacher feedback was provided to students in electronic version and students had one week to revise their writings and then submitted their final drafts online.

Data consisted of 493 drafts from the forty-one participants during the two feedback-revision stages. Each participant revised their first draft more than once based on the feedback offered by AWE. And then, teacher offered feedback to them on the texts which had been revised by students according to AWE feedback. Students revised their essays and then submitted their final drafts online.

Additionally, one-on-one semi-structured interviews with five participants were administered at the end of the task cycle in Mandarin. Each participant was interviewed around 20–50 minutes and all the interviews were audio-recorded. Before the interview, the participants had a chance to review the texts of the essays they had written to have an overall outlook on the content of interview. Interview data helped us to obtain further responses of students.

3.6 Data Analysis

In order to answer the first research question, firstly, students' first drafts and their modified essays were collected and compared to locate the revisions they have made. And then, the accepted feedback from AWE and teacher was identified and coded based upon previous literature (Tian & Zhou, 2020). Feedback was classified into two categories, surface-level feedback and meaning-level feedback. The former focused on grammar, mechanics and vocabulary, while the latter paid attention to the organization and meaning of the texts. More specifically, surface-level feedback referred to any feedback that did not include any changes of meaning at lexical, sentence, paragraph, grammar and mechanics, while meaning-level feedback referred to feedback generating meaning changes. Grammar feedback was related to tenses, subject-verb agreement, single plural forms, the third-person singular, etc. Mechanic feedback involved capitalization and punctuation marks, etc. In addition, the amount and type of total feedback provided by AWE and the teacher of 493 essays were computed. After that, the coded feedback types and revision types were checked to see whether they were matched. Feedback was marked as being incorporated when the coded feedback types and revisions types matched.

To answer the second and third question, the uptake received by AWE and teacher of each participant were calculated and the categories of feedback uptake were counted. Additionally, uptake rates were then counted for descriptive statistical comparisons. After that, semi-structured interview records were analyzed qualitatively. Interview were transcribed verbatim and classified into different categories to figure out learners' preference, general view and motivation towards each type of feedback.

Table 1. Feedback categories of AWE and teacher

Feedback categories		Examples	
Surface-level feedback	Meaning-preserving	Lexical	“Change learn to obtain because obtain knowledge is a set phrase.”
		Sentence	“Combine into one sentence.”
	Grammar	Paragraph	“Please combine them into a new paragraph.”
			“Pay attention to tense of verb here.”
Meaning-level feedback	Meaning-related		“Capitalize the first letter of the first word.”
		Lexical	“Change the word accomplishment. It’s meaning doesn’t suit here.”
		Sentence	“Add more information on your feelings.”
		Paragraph	“Rewrite this part to summarize the passage.”

4. Results & Discussion

This chapter addresses the research questions that were presented in the previous chapter. Firstly, students’ writing tasks were collected and analyzed. Then, the feedback provided by AWE and the teacher were gathered and coded. Those feedbacks can be divided into two categories, surface-level feedback and meaning-level feedback. Secondly, the amount of feedback accepted by students were calculated and described. The uptake rate was presented to compare students’ preference of AWE feedback and teacher feedback as well as their attitude towards them. Lastly, a semi-structured interview was conducted to further explore students’ perceptions of feedback from AWE and teachers, as well as their reasons for accepting or rejecting feedback.

4.1 Categories of AWE Feedback and Teacher Feedback on Students’ Drafts

The first research question was addressed here by presenting the number and the category of AWE feedback and teacher feedback in the online EFL writing context. The forty-one participants received 657 feedback items in total. Out of the total feedback received, AWE feedback amounted to 371 items, which was more than the 286 items of feedback provided by teachers. Interestingly, surface-level feedback accounted for a total of 641 items, whereas meaning-level feedback only amounted to 16 items, which was significantly lower than the amount of feedback provided by AWE. Although AWE offered a significantly greater number of mechanics feedback compared to other types of feedback, the teacher still provided 90 feedback items related to mechanics. This suggests that AWE may not be as efficient in identifying mechanics mistakes.

In terms of feedback categories, AWE feedback only provided surface-level feedback with meaning preserved. Among the 371 AWE feedback items, 20.8% came from lexical meaning-preserving feedback, 3% came from sentence meaning-preserving feedback whereas grammar and mechanic feedback possessed a much higher rate of 38.3% and 41%.

As regards teacher feedback, although compared with AWE feedback, the teacher offered much more meaning-level feedback, it only accounted for 6% with the total number of 16 feedback items, which was extremely low compared with surface-level feedback. In addition, all of them came from lexical and sentence level. Like AWE feedback, most teacher feedback was focused on grammar and mechanics, accounting for 29.4% and 31.5% of the feedback respectively. In addition, lexical and sentence meaning-preserving accounted for 18.9% and 14.7%.

In summary, AWE feedback in the forty-one students' drafts served as multiple functions. It not only offered corrective feedback on language, vocabulary, grammar, and mechanics, but also provided students with suggestions to expand their linguistic repertoires, functioning just as teacher feedback. As a result, students' writing ability was prompted (Evans, Hartshorn, McCollum, & Wolfersberger, 2010). The main advantages of AWE feedback were that it's timely and flexible, consistent with Wilson and Czik (2016). In English teaching practice, it's suggested to make use of those advantages to facilitate both English learning and teaching. Teacher feedback generated more revisions in content, while AWE generated more revision at lexical level, which was in line with Bai and Wang (2018). As a result, it's important to effectively combine AWE feedback with teacher feedback in teaching practice.

However, AWE feedback was found to be less effective than teacher feedback in providing feedback on the meaning level, which is crucial for improving and enhancing students' writing skills. Nevertheless, its positive reinforcement and extended learning opportunities could lead students to explore language and meaning beyond their current writing tasks. In addition, incorporating both AWE feedback and teacher feedback can benefit students by providing them with more opportunities to revise their essays and continually work towards perfecting their drafts, which was in line with Zhang (2019).

In this study, it's noted that with the combination of AWE feedback and teacher feedback, students conscientiously revised their drafts and their autonomous learning ability was promoted. This finding was consistent with Hang and He (2018). The study also suggested that integrating various forms of feedback in instructional design was valuable and had significant potential for improving the quality of students' writing.

Table 2. Feedback Categories of AWE and Teacher

			AWE feedback quantity	Teacher feedback quantity	Total
Surface-level	Meaning-preserving	Lexical	65	54	119
		Sentence	12	42	54
		Paragraph	0	0	0
	Grammar		142	84	226
	Mechanics		152	90	242
	total		371	270	641

		Lexical	0	4	4
Meaning-level	Meaning-related	Sentence	0	12	12
		Paragraph	0	0	0
		Total	0	16	16
Total			371	286	657

4.2 Students' Uptake of AWE Feedback and Teacher Feedback

The second research question was addressed by analyzing both the quantity and types of AWE feedback and teacher feedback that students received and incorporated into their writing. Among the 657 feedback items, more than half of them were accepted by the students. The feedback uptake rates of AWE and the teacher differed only slightly, with AWE having a rate of 52.6% and the teacher having a rate of 47.9%. In addition, as for surface level feedback, in terms of feedback categories, the uptake rate of mechanics was much higher than other types of feedback. The uptake rate of lexical meaning-preserving feedback and grammar also reached a high-level compared with sentence level meaning-preserving feedback. Moreover, the uptake rate of sentence meaning-preserving feedback given by the teacher was nearly double the uptake rate of AWE's sentence meaning-preserving feedback, at a rate of 33.3%.

Table 3. Uptake of AWE Feedback and Teacher Feedback

			AWE feedback		Teacher feedback		Total	
			Feedback uptake quantity	Feedback uptake rate	Feedback uptake quantity	Feedback uptake rate	Feedback uptake quantity	Feedback uptake rate
Surface-level	Meaning-preserving	Lexical	26	40%	28	51.9%	54	45.4%
		Sentence	2	16.7%	16	38.1%	18	33.3%
		Paragraph	0	0	0	0	0	0
		Grammar	59	41.5%	38	45.2%	97	42.9%
		Mechanics	108	71.1%	45	50%	153	63.2%
	Total	195	52.6%	127	47%	322	50.2%	
Meaning-related	g-level	Lexical	0	0	4	100%	4	100%
		Sentence	0	0	6	50%	6	50%
		Paragraph	0	0	0	0	0	0
		Total	0	0	10	62.5%	10	62.5%
Total		195	52.6%	137	47.9%	332	50.5%	

In terms of teacher feedback, the teacher offered more lexical and sentence level meaning-related feedback than AWE. AWE did not offer meaning-level feedback, hence, there was no uptake of it. On the contrary, 10 meaning-level feedback items offered by the teacher were taken in by the students and they enjoyed the highest uptake rate of 62.5%.

In conclusion, analysis of the quantity and rate of feedback uptake by AWE and the teacher reveals the following observations. Firstly, compared with AWE feedback, the highest uptake rate came from the meaning-level feedback by the teacher, symbolizing the teacher was effective in providing meaning-related feedback although it had a lower quantity. This suggested that teacher feedback mainly paid attention to meaning-level, such as organization, logic and content of texts. It was more accurate, unambiguous, detailed and personalized, consistent with Chen and Cheng (2008). In addition, students were selective in incorporating feedback and the quality and accuracy of AWE feedback was not as good as teacher feedback, consistent with Dikli and Bleyle (2014). It's suggested that AWE system constantly expand its corpus to provide more accurate and comprehensive feedback.

Secondly, the highest uptake quantity went to mechanics for both AWE and the teacher, which showed that they paid much attention to surface level feedback and English competence of participants was relatively low. AWE system was quite effective in spotting mistakes on the surface level, such as mechanics, collocation and grammar, while it was insufficient to provide feedback in meaning-related areas, such as logic, structure and coherence, which conformed with Dikli and Bleyle (2014). It would be better if AWE could provide more comprehensive feedback.

Thirdly, this study also revealed that some students don't actively engage in revising their texts and perfecting their compositions, which was partly inconsistent with Baker (2016). However, some students abundantly and consistently incorporated feedbacks and revised their drafts due to the formative feedback they have received in order to improve text quality, which was in line with Kellogg, Whiteford and Quinlan (2010).

4.3 Students' Engagement with Feedback and Decision-Making Process

The third research question was related to learner engagement with multiple feedback sources and their decision-making process. All the five students were active subjects voluntarily engaging themselves with these feedback sources and making decisions on whether to incorporate these feedbacks and make revisions. Their uptake of different feedback sources was dynamic and individualized.

4.3.1 The Overall View and Evaluation of AWE and Teacher Feedback

The five participants' perceptions of AWE feedback and teacher feedback were investigated through a semi-structured interview. All five participants expressed positive attitudes toward AWE feedback. They appreciated the suggestions for correcting grammatical and mechanical mistakes, as well as the substitution feature that helped them expand their vocabulary and use more complex expressions. These findings align with Wilson and Czik (2016). Furthermore, some participants noted that conducting the revision process online helped them save face. They appreciated being able to make changes privately and without drawing attention to their mistakes. However, some participants

expressed concerns about the synonym feature offered by the AWE system. They felt that the system did not provide enough detail about the differences between the suggested synonyms, which could lead to confusion or inappropriate word choices. The AWE system simply pointed out the synonyms without explaining their nuances.

Regarding teacher feedback, there was a noticeable disparity in the participants' overall opinions. Some participants held that the teacher feedback was quite effective in providing both surface-level feedback and meaning-level feedback, but others considered that teacher feedback was not so necessary since they had incorporated AWE feedback, inconsistent with Bai and Wang (2018). Furthermore, the participants who were solely focused on their scores did not incorporate the feedback given by the teacher, as they believed it would not contribute to improving their scores. They considered the process of repeatedly revising their essays as tedious and time-consuming, which tested their patience.

As for participants' preference of feedback type, some of them favored AWE feedback because of its convenience, flexibility and timeliness (Wilson & Czik, 2016). Consequently, upon submitting their drafts, they could promptly receive feedback on their essays and proceed to make revisions without delay. However, others appreciated teacher feedback due to its accuracy and comprehensiveness. Moreover, the study found that teacher feedback includes organization, content, meaning, coherence and logic, while AWE feedback concentrates on grammar, vocabulary, collocation and mechanics. In addition, the participants appreciate the combination of AWE feedback and teacher feedback, for which they complement each other, and they believe that multiple feedback sources do play a much greater role in enhancing their writing competence, which conformed with Zhang (2019).

4.3.2 Participants' Decision-Making Process

The participants demonstrated different patterns of engagement with AWE feedback and teacher feedback by adopting different revision operations. All the five learners reported that they had employed different strategies to help make decisions on whether to incorporate the feedback or not, consistent with Zhang and Hyland (2018). Most of the participants partially adopted AWE feedback because it helped them to correct some grammatical, lexical and mechanics mistakes. However, some feedback offered by the AWE system was declined by participants, as they believed that certain suggestions were incorrect or that certain areas, such as substitution or collocation, did not require revision. Additionally, some feedbacks offered by AWE system were quite ambiguous and vague, such as "The expression is unidiomatic", although they were willing to incorporate them, they did not know how to revise it. Furthermore, sometimes they lacked the proficiency to distinguish whether the feedback is right or wrong due to their limited English competence, so they just incorporated all the feedback provided by the AWE and the teacher.

A good number of personal and contextual factors would influence students' engagement with AWE feedback. And students' engagement with AWE feedback and teacher feedback was stative, in line with Zhang and Hyland (2018). The study found that in the participants' revision process, most of them did not make self-revisions. This phenomenon was partly attributed to their relatively low proficiency in

English and partly due to a sense of inertia. In addition, their attitudes towards the pertinence and effectiveness of AWE feedback varied. Some believed that AWE offered feedback on different categories in detail so it was targeted, while others suggested that the machine feedback only identified and pointed some general problems of their writing without offering precise revision suggestions, which was in line with Bai and Hu (2017),

In terms of the scores offered by *Pigai*, some participants thought it was unreasonable for it paid too much attention to the surface level, which meant if you use more complicated words or collocations, your grade would improve. However, there was no change in the content and organization of the essays. Similar findings had also been drawn in Wilson and Czik (2016).

In terms of teacher feedback, among the five participants, three of them expressed their willingness to accept the teacher feedback due to its correctness and effectiveness. Some individuals indicated that they were unable to integrate their teacher's feedback into their writing because they lacked sufficient time, and found the process of incorporating the feedback to be more intricate than that of the AWE system's feedback. It was convenient to make revisions based on AWE system since participants could click the "revision" to revise their drafts. On the contrary, if they wanted to make revisions according to teacher feedback, they first needed to have an overall glance over the feedback and then back to the essay and made revisions. As a result, these individuals stated that they would be more likely to incorporate teacher feedback if the process of modifying their text was simpler.

4.3.3 Factors Affecting Feedback and Uptake

Previous research suggested that dynamic corrective feedback was useful in prompting students' writing ability (Evans, 2010). When interviewed about what factors might affect the content, quality and effect of teacher feedback, the participants thought available time, feedback type (whether it was direct feedback or indirect feedback) and students' writing competence would matter. Some participants also thought teachers would pay more attention to high-quality essays. They believe the teacher would provide more feedback if he or she has sufficient time. In addition, all the participants expressed their preference of direct feedback. Consequently, they would take in more direct feedback compared with indirect feedback.

Overall, participants believed the following factors would affect their uptake decision-making process. Firstly, participants' English competence. L2 proficiency seemed to influence how students conducted revision operations. Students with lower levels of L2 proficiency tended to adopt a form-focused approach and make surface-level changes in revision, consistent with Allen and Mills (2016). With higher competence, they would have the ability to judge whether the feedback is correct or not. Secondly, their preference towards certain feedback type. They would incorporate more feedback if they appreciate that feedback. Thirdly, the pertinence and effectiveness of feedback. Fourthly, essay scores. The participants in the study showed a clear willingness to integrate feedback that could positively impact their scores. They were motivated by the prospect of seeing their performance improve, even if the feedback wasn't always completely accurate. Fifthly, motivation of their writing,

this is consistent with Yu et al. (2019). Some participants were interested in the topic of this writing task, so they would make more efforts to revise and perfect their essays. Nevertheless, for the score-oriented participants, they paid much attention to the grades of each revision, ignoring the true and original intention of writing.

5. Conclusion

The objective of this study is to investigate the various types of feedback offered by AWE system and a teacher, as well as to examine how students engage with this feedback and the underlying reasons that motivate their uptake process. By delving into these issues, the study aims to shed light on the ways in which feedback can be optimized to promote more effective learning and writing outcomes among students. This part will first summarize the key findings of the study, highlighting the most significant results and insights that emerged from the research. Following this, the part will outline some of the limitations of the study and offer suggestions for future research that could build on this work. Finally, this part will discuss the implications of these findings for the teaching of EFL writing in Chinese universities, offering practical recommendations for instructors and educators in this field.

5.1 Major Findings

This study aims to figure out the effect of feedback on students' writings. It presented a detailed description of what types of feedback AWE system and teacher offer and how students engaged with them.

Firstly, this study found that AWE system provided more feedback compared with teacher feedback and it tended to provide surface-level feedback without generating any meaning changes, while teacher feedback paid attention to meaning-level feedback, which was perceived as more useful and vital in developing students' writing ability by the participants. Among surface-level feedback, mechanics feedback offered by AWE system was much more than other types of feedback and the amount of meaning-related sentence feedback was higher than other kinds of meaning-level feedback.

Secondly, the result showed that students' engagement with different types of feedback varied and how they perceived the role of revision and how they evaluated and monitored their revision process in L2 writing matter. Research also found that students incorporated more meaning-level feedback provided by the teacher, which shown that the teacher was authoritative and effective in providing feedback. In addition, the mechanics uptake was high, signifying that participants' writing competence was relatively low. In general, the study observed a consistent uptake of both AWE feedback and teacher feedback by the participants, suggesting the effectiveness of feedback as a means to enhance the students' writing proficiency.

Thirdly, the semi-structured interview showed that all of them expressed positive view on AWE feedback for its timeliness and comprehensiveness in providing surface-level feedback. Moreover, they won't feel embarrassed or losing face since the feedback were provided online. However, some participants showed concerns about AWE system because it lacked clarification of its feedback. As a

result, they needed to spend extra time to search more information in order to have a full understanding of their writing errors, which was time-consuming and demanding. On the contrary, participants' perspectives on teacher feedback varied. For score-oriented students, they were reluctant to incorporate teacher feedback because it played little role for them to get higher grades. Nevertheless, there were three participants expressed their willingness to receive teacher feedback because it is effective in improving their integral writing ability.

Lastly, participants' views and preference of different feedback affected their uptake. In general, all of them held positive attitudes toward AWE feedback and teacher feedback, while some had a nonchalant attitude when uptake with those feedbacks. They perceived AWE feedback as helpful in their L2 writing, and focused on its advantages in identifying collocation mistakes and providing extended learning points. They incorporated AWE feedback partly in that it corrected some surface-level mistakes but some of them were so rigid and were wrong. Furthermore, due to the correctness and effectiveness of teacher feedback, some participants received all the teacher feedback. Moreover, participants believed their English competence, essays grades and pertinence of feedback would influence their uptake. Furthermore, the participants appreciated multiple feedback practice, considering it helped them improve their writing ability effectively.

5.2 Limitations and Suggestions for Future Studies

This study was an exploratory attempt to find out students' engagement of AWE feedback and teacher feedback. Although it was carefully designed and some results were concluded, there were still certain limitations.

Firstly, it should be noted that the study had a relatively small sample size consisting of only forty-one participants from a single university. The absence of participants from other universities and a larger sample size limits the generalizability of the study's findings and its representativeness of a broader population.

Secondly, the study's experimental period was relatively short and the writing task assigned to the participants was limited. With only one writing task, it is challenging to determine the long-term impact of this type of writing practice on the enhancement of students' English proficiency over time.

Generally, it is recommended that future studies conduct further research on the topic by increasing the number of subjects from diverse universities and extending the duration of the experimental period. In addition, more writing tasks should be assigned in order to examine students' long-term writing ability. Furthermore, it is crucial to incorporate peer feedback in future studies to facilitate a comprehensive comparison between various feedback sources. More importantly, in terms of improving students' writing competence and cultivating their independent writing ability, the potential of AWE feedback needed to be further explored, especially in how to use it to stimulate students' interest in independent learning and improve their learning efficiency.

5.3 Implications

While some aspects of this study may be limited and require further investigation, it is hoped that it can

serve as a starting point for future research on the impact of feedback on students' writing. By building on the insights gained from this study, we can deepen our understanding of how feedback uptake influences writing outcomes, and develop more effective strategies to support student learning in this area. To facilitate student engagement with feedback, teachers are advised to provide explicit instruction on how to make use of revision strategies to respond to AWE feedback and teacher feedback and offer more direct feedback that clearly showed the direction of revision, especially for those less proficient students. Given the heavy workload faced by teachers, AWE feedback is becoming increasingly important in L2 writing instruction. To optimize its benefits for student learning, teachers need to make the most of AWE feedback and combine it effectively with teacher feedback. By leveraging the strengths of both approaches, teachers can provide more comprehensive and personalized feedback to students, even in large classes, and support them in developing their writing skills.

Furthermore, through semi-structured interview, we find some deficiencies in AWE system. That is, it could not provide comprehensive feedback in terms of the structure and logic of the text, and the comments are not detailed enough. Some feedback only points out mistakes without providing suggestions for revision. Considering its shortcomings, the following suggestions are put forward. First and foremost, AWE system should enrich its corpus continuously, make the feedback more detailed, and improve the technology of structural analysis and logical analysis. Besides, since teacher feedback is conducted online and plays a vital role in enhancing students' overall writing ability, it is suggested that the operation of receiving teacher feedback can be as easily as AWE feedback. At present, students need to make more effort in incorporating teacher feedback in that they can't revise it sentence by sentence and have to switch from their original draft and teacher's feedback constantly. Lastly, in teaching practice, teacher should make use of the advantages of AWE rather than totally depend on it to revise students' essays. Only when AWE system is well complemented by teacher, can the optimum impact of improving students' writing competence be achieved.

All in all, with the combination of educational technology and writing teaching, teachers should upgrade themselves to integrate educational technologies into teaching practice effectively.

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Appendix

Appendix A. A sample of feedback provided by Pigai

<p>2.1 In his career, Michael Jordan has been selected into the NBA all star team (14 times in total) every year. [👍 0]</p>	<p>✖ [名词错误]请检查team, 该处名词一般使用复数形式。 📖 [学习提示]易混词汇: total, sum, whole 均有“总数, 全体”之意。 ⌵</p>
<p>2.2 He has been selected as the NBA all star MVP for three times, the NBA best lineup for a while in 1985, the NBA best defensive player of the year in 1988, the NBA best defensive lineup for 9 times, the NBA snatch King three times, the NBA all star dunk championship twice, 1984 and 1992 He won the gold medal in the Olympic Games. [👍 0]</p>	<p>✖ [句子错误]请检查snatch, 确认主谓一致。 ✖ [介词错误]介词误用, 建议将for+基数词+times改为基数词+times。 ✖ [大小写错误]确认 He 大小写使用正确。 ⚠ [连词警示]检查句子中的连词是否缺失。 📖 [学习提示]易混词汇: athletics, sport, game 均有“体育运动”之意。注意game和match的区别。 ⌵</p>
第2段	
<p>3.1 On April 16,2003, Michael Jordan officially announced his retirement after the last game of the wizard's home game against the 76ers. [👍 0]</p>	<p>📖 [学习提示]易混词汇: announce, declare, proclaim, pronounce, advertise, broadcast, publish 均含“宣布, 公开”之意。 ⌵</p>
<p>3.2 As the greatest basketball player in history, Michael Jordan was officially selected into the Nai Smith Basketball Hall of fame on September 11,2009 [👍 0]</p>	<p>⚠ [标点警示]该句句首与上一句句尾标点符号之间缺少空格, 请检查。 📖 [学习提示]易混词汇: big, large, great, grand 均含“大的”之意。 ⌵</p>

Appendix B. A sample of feedback provided by teacher

教师点评记录:

Michael Jordan, born on February 17, 1963 in Brooklyn, New York, USA, is a former professional basketball player and a shooting guard, nicknamed "Air Jordan". The starting point of Jordan's basketball career at Wilmington Laney high school(缺少谓语动词), however, the young Jordan was not noticeable. The next year, he was only 5 feet 11 inches tall, and he was dropped from the first team to the second team by the coach. But Jordan didn't give up. By the time he was in senior three, he was selected into the national high school student lineup(by the time 时态使用错误).

In his career, Michael Jordan has been selected into the NBA all star teams (14 times in total) every year. He has been selected as the NBA all star MVP three times, the NBA best lineup for a while in 1985, the NBA best defensive player of the year in 1988, the NBA best defensive lineup for 9 times, the NBA snatch King three times, the NBA all star dunk championship twice,(缺少连词, 建议在最后一个分句加and, 此外, for 9 times应该去掉for, 而且for a while 建议删除) 1984 and 1992 he won the gold medal in the Olympic Games(这句话建议单独成句, 在句首加上In).

On April 16, 2003, Michael Jordan officially announced his retirement after the last game of the wizard's home game against the 76ers. As the greatest basketball player in history, Michael Jordan was officially selected into the Nai Smith Basketball Hall of fame on September 11, 2009

- 注1.缺少谓语动词
- 注2.by the time 时态使用错误
- 注3.缺少连词, 建议在最后一个分句加and, 此外, for 9 times应该去掉for, 而且for a while 建议删除
- 注4.这句话建议单独成句, 在句首加上In