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Review of Researches on Computer-Mediated Peer Feedback and L2 Proficiency

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Abstract

The researches on peer feedback and L2 proficiency as an influencing factor has reached a considerable scale both domestically and internationally, and has been put into practice in practical teaching. In recent years, online peer feedback and automated corrective feedback have also been constantly emerging. Every empirical research related to it has its own focus, strengths, and areas for improvement. How to organically combine relevant researches and apply it to EFL learners is also worth paying attention to.

Keywords: peer feedback, L2 proficiency, automated written corrective feedback

1. Introduction

In recent years, peer feedback has received a lot of attention from scholars and teachers. Learners can receive comments from peers in this process, which may be in L1 or L2 (Yu & Lee, 2014; Williams, 2018). Peer feedback is a two-way process in which learners receive suggestions, corrections, or certain ideas from others, and also present ideas and opinions of their own to others. Such feedback can be both verbal and written, and what is important is that learners fully communicate and collaborate during the process. In peer feedback, learners can always be challenged by a higher proficiency learner, thus driving them to improve their English proficiency (Cheng, 2019).

In the Information Age, the student-student interaction, teacher-student interaction, and human-computer interaction are integrated into an organic whole, which refers to multiple interaction. In the process of second language acquisition, learners participate in different communicative activities in different situations with the use of the second language as both the medium and the goal. In these communicative activities, the essence of peer feedback and teacher feedback is interaction, as the discourse analysis (Xu, 2016) and affective attitudes (Gabrys-Barker, 2018) in the feedback process show clear characteristics of human-computer interaction. Moreover, interactions also occur in computer-mediated contexts. The human-computer interaction established between learners and virtual environments such as computer software or online learning platforms enables learners to be in a more harmonious and natural environment of multiple interactions. In this environment, the two-way perception between learner and

computer is available, so the development of the learner's second language proficiency is not only the result of inter-individual feedback, but also the result of the interaction between the individual and the ecological environment.

2. Peer Feedback and L2 Proficiency

L2 proficiency is considered to be an important factor in peer feedback (Nelson& Carson, 1998; Liu & Hansen, 2002; Hyland & Hyland, 2006). In practical contexts, it is the normal state that students vary in L2 proficiencies in English classes, therefore, learners' L2 proficiency should be taken into account when organizing peer feedback. How to group learners of similar and different proficiencies is an issue that teachers need to consider. This is because each learner of different proficiency plays a different role in peer feedback. High-proficiency learners can support low proficiency learners, and conversely, low proficiency learners can contribute to high proficiency learners' deeper understanding of knowledge. Also, learners at similar proficiencies can facilitate communication in the process of receiving and providing feedback. Therefore, the differences in performance and effects of learners at different proficiencies during peer feedback are what need to be investigated. However, most of the existing studies have controlled it as the variable rather than examining (Nelson & Murphy, 1992; Mendonça & Johnson, 1994; Suzuki, 2008; Hu & Lam, 2010).

3. Automated Written Corrective Feedback and Computer-Mediated Peer Feedback

Internet is able to create a multidimensional interactive environment that enables student-student, student-teacher, student-learning content, and student-learning environment interactions, which also makes multimodal interactions possible, such as synchronous and asynchronous, text, voice, and video (Zeng, 2020). Existing research has shown that multiple interaction feedback can motivate learners and increase engagement and collaboration (Knight et al., 2020), so that learners have better feedback input in this environment (Zhang & Hyland, 2022).

In traditional English writing classes, learners either revise their own compositions, ask the teacher, or receive help from peers face-to-face. However, with the rapid development of computer technology, the traditional feedback mode has changed, and automated written corrective feedback (AWCF) has emerged (Chen, 2016; Link et al., 2020). At the same time, peer feedback is not only limited to face-to-face communication. Using computers as a medium, peer feedback can occur in different spaces and even different time, and composition texts can be delivered via computers without the need for handwriting. Previous studies have examined the differences between face-to-face and computer-mediated peer feedback (Tuzi, 2004; Dizon, 2016; Ho et al., 2020), and the results suggested that computer-mediated peer feedback is superior in terms of increasing learner enthusiasm and motivation. However, other results have also shown that learners may feel pressured in online peer feedback because of the need to respond immediately (Shang, 2019).

AWCF can provide immediate feedback to help English learners with their second language writing, which has been shown to be effective in improving the accuracy of English writing and proficiency of English writing. The studies that have been conducted on the effectiveness of AWCF have only focused on the comparison of AWCF with traditional feedback modes (Wang et al., 2013; Chen, 2016; Sarré et al., 2019). In contrast, AWCF and computer-mediated communication have been less studied in second language writing, especially when combining the two emerging modes for the same writing task.

AWCF was created and developed with the intention of better assisting learners in English writing, and the computer-mediated feedback approach emerged with the same purpose of applying science and technology to the English classes support learners' peer feedback. Thus, current research on AWCF should focus not only on whether it can provide feedback, but also on how it can provide optimal feedback.

4. Current Status of Research on Peer Feedback

4.1 Studies on Peer Feedback and L2 Proficiency

L2 proficiency is an important factor in the effectiveness of peer feedback. It is clear that there is a significant difference in the performance of high and low proficiency learners in peer feedback. Higher Proficiency (HP) learners are more capable of giving guidance and constructive comments on deeper level errors in compositions, for example, composition structure, logic, etc.; however, they also have difficulty trusting feedback from

others (Hu & Lam, 2010) and tend to believe that their own ideas are correct. In contrast, Low Proficiency (LP) learners are easily marginalized in peer feedback (Yu & Lee, 2016; Lee, 2017). They are used to trusting and accepting suggestions from HP learners (Strijbos, Narciss & Dünnebier, 2010), which makes them skip the thinking process directly, so that peer feedback loses its meaning of promoting deep thinking and providing two-way communication. In addition, LP learners have difficulty giving higher quality feedback (Hyland & Hyland, 2006; Tsui & Ng, 2000), and their comments on essays are usually dominated by more superficial errors such as writing errors and low-level grammatical errors.

Existing studies on peer feedback and L2 proficiency fall into two main categories. The first focuses on feedback outcomes and compares the output of HP learners with LP learners in peer feedback. For example, Lundstrom and Baker (2009) examined the effects of peer feedback on writing ability and compared the relationship between learners' L2 proficiency and the degree of improvement in writing ability. They divided a group of English learners into two groups: one group gave feedback only without receiving comments from others, and the other group received feedback only from others without giving their own comments. By comparing the pre-test and post-test, they found that the "giving" group improved their writing skills more than the "receiving" group. An analogy between this grouping and L2 proficiency would suggest that higher proficiency learners have more room for improvement in peer feedback because they are more able to "give" feedback.

The second focuses on the feedback process and describes the performance of HP learners and LP learners in peer feedback respectively. For example, Leeser (2004) analyzed the conversations generated by three subgroups (HP-HP, HP-LP, LP-LP) in a Spanish classroom, and the data showed that the HP homogeneous subgroup (HP-HP) produced the highest number of language-related episodes. Similarly, Allen and Mills (2016) analyzed the participants' interactions as well. They examined the relationship between learners' L2 proficiency and the type and amount of feedback given, finding that HP learners were able to engage in more meaningful conversations related to writing revision and provide more composition revision during peer feedback. Unlike the above, some other studies have focused on the writing revision aspect and concluded that HP-HP subgroups produced the most writing-related meaningful talk and offered the highest number of composition revisions (Mendonça & Johnson, 1994; Nelson & Murphy, 1992; Suzuki, 2008). These results all support some studies suggesting that LP learners produce fewer meaning-related revisions (Berg, 1999; Paulus, 1999). Of course, this also suggests that LP learners can gain a lot from HP learners due to scaffolding. However, Kamimura (2006) showed contradictory results, with LP learners providing more essay comments than HP learners. This contradictory finding may be related to the type of feedback. In Kamimura's study, learners gave more feedback on content-related issues rather than language-related issues. Supporting this finding is also Yu and Lee (2016), who studied three heterogeneous groups of 12 learners and found that LP learners were actually capable of providing a range of high-quality comments, and 80% of these comments were accepted and adopted by their peers.

Another type of research has investigated perceptions. Amores (1997) argued that learners' perceptions largely influence interactions. When participants perceived themselves to be as same low proficiency as their peers, they were more likely to accept comments from others; conversely, if participants made more comments about their peers, they perceived themselves to dominate the feedback interaction. Similarly, Allen and Katayama (2016) found that learners' L2 proficiency and their perceptions of their peers' L2 proficiency had a significant impact on the type and amount of feedback.

4.2 Deficiencies

Despite the richness of the above studies, they all have their limitations. First, most studies have focused on the dynamics of learners at different proficiencies during the feedback process, while the analysis of output has rarely been addressed. More importantly, although L2 proficiency was used as the independent variable, most of the existing studies conducted homogeneous grouping based on controlling for intra-group proficiency differences, that is, HP and LP students were divided into two groups and their performance was studied separately. However, homogeneous grouping is not realistic considering the actual teaching context, where

students' proficiencies vary in EFL classrooms. Moreover, homogeneous grouping of students within the same class would only increase the gap between their L2 proficiencies, with HP learners progressing and LP learners standing still. More importantly, the interaction in peer feedback is a social behavior that occurs not only between learners of the same proficiency but also between learners of different proficiencies. According to Sociocultural Theory, high proficiency learners are able to provide peer scaffolding and emotional support to low proficiency learners during the interaction, and this scaffolding is considered to be one of the most important factors in language learning and use. Therefore, the ideal grouping is heterogeneous grouping, so that LP learners can gain from HP learners and vice versa (Yu & Hu, 2016; Yu & Lee, 2016). In summary, it becomes necessary to investigate the products of different L2 proficiencies of learners in heterogeneous groupings.

5. Current Status of Research on Online Feedback

5.1 Studies on Automated Written Corrective Feedback and Computer-Mediated Peer Feedback

In recent years, with the popularization and widespread use of computer technology, the development of automated writing evaluation (AWE) is booming, and computer-mediated feedback have received attention of many teachers and scholars. Unlike traditional teacher feedback, this emerging approach can quickly provide comments and revisions to students' writing, saving a lot of time and labor costs, so that teachers can focus more on deeper level such as essay structure and logic (Dikli & Bleyle, 2014; Wang, 2015). The validity and accuracy of automated written corrective feedback (AWCF) has been tested (Keith, 2003; Vantage Learning, 2006; Enright & Quinlan, 2010; Weigle, 2010). Studies have shown that AWCF can accurately identify linguistic problems in writing, which is a great reference for students' composition revision (Ranalli, 2018; Zhang & Hyland, 2018; Link, Mehrzad & Rahimi, 2020), naturally, it can also help students reduce errors and improve the quality of their writing (Lee et al., 2013; Wang, Shang & Briody, 2013; Stevenson & Phakiti, 2014; Yu, 2015; Ranalli, Link & Chukharev Hudilainen, 2017). Several studies have focused on online peer feedback, and most of these studies have centered on the feedback itself, such as the nature and characteristics of computer-mediated peer feedback. For example, Yamada (2009) argued that online peer feedback can enhance learners' reflection on grammatical errors and thus improve grammatical accuracy. Saeed & Ghazali (2017) studied online peer feedback conducted by nine Arab university students, and found that the interactive process focused mainly on the revision of texts, while also involving some technical manipulation issues. In addition to computer-assisted peer feedback, machine feedback is also an emerging form of feedback.

Clearly, AWCF has become a trusted form of feedback around which much of the existing research has been conducted. A significant portion of these studies follow past examinations of the effectiveness of AWCF, with the difference that existing studies have developed from different perspectives, specifically exploring and analyzing the differences between AWCF and teacher feedback, and summarizing the quality and level of both types of feedback. For example, Wang et al. (2013) explored the effects of AWCF and concluded that AWCF was effective in improving writing accuracy in terms of spelling, grammar, and word usage. Also investigating writing accuracy, Wang, Shang & Briody (2013) found that after receiving AWCF, the experimental group significantly reduced the number of errors in English writing. Similarly, Guo et al. (2021) explored the error correction capabilities of a specific AWCF tool, Grammarly, for academic English writing, showing that its accuracy was significant, and that the accuracy of students' writing and revision was largely due to it. This view is also supported by Frear (2012), Van Beuningen et al. (2012), Li et al. (2015), who indicated that students were more able to focus on the sentence level when receiving AWCF, and therefore AWCF could significantly improve the grammatical accuracy of students' English writing. In addition, Waer (2021) suggested that AWCF was also helpful in reducing writing anxiety among English writers. Based on the quantitative studies, some of the studies also conducted semi-structured interviews with the participants, which were used to supplement and analyze the experimental data for qualitative research. For example, Warschauer & Grimes (2008) used a combination of quantitative and qualitative analyses to examine the effectiveness of Criterion and MY Access!. They suggested that

AWCF for essay revision was mainly at the word and sentence level, not playing a large role in substantive revision of content. This is related to the nature of AWCF, however, it can also be considered as one of its limitations. Similarly, Chen & Cheng's (2008) test of the validity of MY Access! was conducted mainly through interviews with students and teachers. In their study, they not only revealed the complexity of testing the validity of AWCF, but also summarized the results of the interviews. They concluded that AWCF was primarily process-oriented and that its validity depended on the teacher's teaching methods and students' perceptions. Still, most students were positive about its effectiveness and found AWCF to be helpful in pointing out grammatical errors, especially for students with low English proficiency. In a follow-up study, Kim (2010) revealed learners' perceptions of Google Docs, and they believed that their writing skills had improved to some extent after the experiment and attributed this to the immediate revision of Google Docs. These studies have tapped into the inherent strengths of AWCF, and a deeper understanding can make AWCF more useful for English teaching.

Conversely, some studies have shown different results. For example, Dikli (2010) and Dikli & Bleyle (2014) studied MY Access! and Criterion respectively and compared them with teacher feedback, showing that teacher feedback was far superior to AWCF in terms of both quantity and quality of feedback, and that the feedback provided by teachers was more accurate, relevant, and personalized. This finding supported Biber, Nekrasova & Horn's (2011) claim that teacher feedback was more influential for EFL learners in non-Western countries because teachers are more authoritative in non-Western cultural contexts.

In summary, scholars have studied multiple perspectives around AWCF and teacher feedback, and have provided their own insights and claims. However, peer feedback (either traditional face-to-face peer feedback or computer-mediated peer feedback), an important aspect of English teaching, has been less frequently studied along with AWCF. Most of the existing peer feedback studies focus on peer feedback vs. computer-mediated peer feedback, and there is a general consensus among scholars on the findings that computer-mediated peer feedback can create a more relaxing environment, reduce the tension of face-to-face peer feedback (Jones et al., 2006), and increase students' enthusiasm and engagement (Liu & Sadler, 2003; Chen, 2016), thus contributing to the improvement of English writing performances (Matsumura & Hann, 2004; Chang et al., 2012; Ebadi & Rahimi, 2017). Based on this research, scholars have further investigated synchronous and asynchronous computer-mediated communication modes. Yang (2010) studied the effects of AWCF and peer feedback on Taiwanese English learners' writing skills and concluded that AWCF was better at correcting students' grammatical errors, while peer feedback was more helpful in improving the content and structure of compositions. Chang (2012) compared three communication modes of peer feedback, face-to-face, synchronous, and asynchronous, and found that students provided the highest amount of revisions in the asynchronous communication mode. This further supported Lightbown's (2008) and Chang's (2009) studies, in which the former found that asynchronous communication mode improved students' writing skills more than synchronous communication mode; the latter concluded that both synchronous and asynchronous communication mode significantly improved learners' engagement, but students with asynchronous communication mode were able to suggest more grammatical comments.

5.2 Deficiencies

However, whether it is computer-mediated peer feedback or computer-automated feedback, both research areas have some limitations. First, current online peer feedback research is still dominated by an asynchronous mode, in which learners criterion their peers' errors in writing on a website or software and give comments and suggestions for revision. Although this kind of peer feedback is conducted in an Internet environment, it is still written in nature because both sides of feedback are text-mediated, and learners are still engaged in individual learning, not able to communicate effectively. In contrast, in computer-mediated peer feedback, face-to-face synchronous interaction allows learners to communicate and negotiate instantly. In a synchronous mode, knowledge is more thoroughly analyzed and understood in a collaborative communication context, and the oral conferencing during synchronous mode increases learners' engagement and stimulates

their positive emotions. In addition, immediate feedback can effectively fill the interactive gaps between learners of different proficiencies, and through meaning negotiation, high proficiency learners scaffold low proficiency learners and facilitate the intake and uptake of low proficiency learners, which better reflects the meaning of peer feedback.

Furthermore, despite the large body of research evidence supporting the effectiveness of machine feedback, a single form of feedback does not apply to everyone. For example, Yang (2010) studied the effects of machine feedback versus peer feedback on Taiwanese English learners' writing ability and concluded that machine feedback was better at correcting students' grammatical errors, while peer feedback was more helpful in improving the content and structure of compositions. If synchronous online peer feedback can be conducted in the context of computer-automated feedback, then, according to Ecological Affordance Theory, the learning resources of machine feedback itself provide significant affordance for online learners and achieve effective human-machine integration. However, the current research on multiple interactions has been conducted offline, focusing on learners' adoption, perception, and absorption of feedback (Lei, 20022; Xu, 2022; Zeng, 2022; Yu, 2022; Guo, 2022), which does not achieve effective human-machine integration, and the affordance that computer environment can provide is weak.

6. Thinking and Prospect

From the above studies, it is easy to see that there are many studies related to both computer-assisted peer feedback and machine feedback, but there are few studies that combine the two for multiple interactions. Most of the few existing studies have focused on multiple interaction itself, examining learners' adoption, perception, and absorption of feedback in a multiple interaction environment (Guo, 2022; Lei, 2022; Xu, 2022; Zeng, 2022). However, some scholars have also investigated the effects of multiple interaction on second language written production. Yang (2010) studied the effects of automated written corrective feedback and peer feedback on Taiwanese English learners' writing skills and concluded that machine feedback was better at correcting students' grammatical errors, while peer feedback was more helpful in improving the content and structure of compositions. Chang (2012) compared three communication modes of peer feedback, face-to-face, synchronous, and asynchronous, and found that students provided the highest amount of revisions in the asynchronous communication mode. This further supported Lightbown's (2008) and Chang's (2009) studies, in which the former found that asynchronous communication mode improved students' writing skills more than synchronous communication mode; the latter concluded that both synchronous and asynchronous communication mode significantly improved learners' engagement, but students with asynchronous communication mode were able to suggest more grammatical comments. However, all of these studies have the limitation that they are rarely integrated with learners' second language proficiency and therefore cannot take into account the individual differences of English learners.

Although all of the above studies were conducted in a computer perspective, they did not fully achieve the ideal human-computer integration. A more ideal computer-assisted language learning environment can be created if synchronous multiple interaction peer feedback is provided in a computer-mediated environment. In such an environment, learners of different proficiencies negotiate, provide peer scaffolding and emotional support, while the machine provides more efficient language use and learning opportunities for learners, achieving the most successful student-student and human-computer interaction.

References

Ai H, Lu X. (2010). A web-based system for automatic measurement of lexical complexity. 27th Annual Symposium of the Computer-Assisted Language Consortium (CALICO-10). Amherst, MA. June, 8-12.

Aljaafreh A, Lantolf J P. (1994). Negative feedback as regulation and second language learning in the zone of proximal development. *The modern language journal, 78*(4), 465-483.

Allen D, Katayama A. (2016). Relative second language proficiency and the giving and receiving of written peer feedback. *System, 56*, 96-106.

Allen D, Mills A. (2016). The impact of second language proficiency in dyadic peer feedback. *Language Teaching Research, 20*(4),

498-513.

Amores M J. (1997). A new perspective on peer-editing. *Foreign Language Annals, 30*(4), 513-522.

Barrot J S. (2019). Examining the task complexity in ELT coursebooks. *The Asia-Pacific Education Researcher, 28*(6), 469-481.

Berg E C. (1999). The effects of trained peer response on ESL students' revision types and writing quality. *Journal of second language writing, 8*(3), 215-241.

Cai Chen. (2021). A study of the relationship between perception of givens and English learning engagement in mobile environments. *Foreign Language World*, (6), 63-71.

Chandler J. (2003). The efficacy of various kinds of error feedback for improvement in the accuracy and fluency of L2 student writing. *Journal of second language writing, 12*(3), 267-296.

Chang C F. (2009). Peer review through synchronous and asynchronous CMC modes: A case study in a Taiwanese college English writing course. *JALTCALL Journal, 5*(1), 45-64.

Cumming A, Kantor R, Baba K, et al. (2006). Analysis of discourse features and verification of scoring levels for independent and integrated tasks for the new TOEFL.

Cushing Weigle S. (2010). Validation of automated scores of TOEFL iBT tasks against non-test indicators of writing ability. *Language Testing, 27*(3), 335-353.

Dewi U. (2019). Peer feedback in reviewing essay. *SALTeL Journal (Southeast Asia Language Teaching and Learning), 2*(2), 1-7.

Ellis R, Yuan F. (2004). The effects of planning on fluency, complexity, and accuracy in second language narrative writing. *Studies in second Language acquisition, 26*(1), 59-84.

Ellis R. (1989). *Understanding second language acquisition*. Oxford: Oxford university press.

Evans N W, Hartshorn K J, Strong-Krause D. (2011). The efficacy of dynamic written corrective feedback for university-matriculated ESL learners. *System, 39*(2), 229-239.

Ferris D. (2011). *Treatment of error in second language student writing*. University of Michigan Press.

Foster P, Wigglesworth G. (2016). Capturing accuracy in second language performance: The case for a weighted clause ratio. *Annual Review of Applied Linguistics, 36*, 98-116.

Gabryś-Barker D. (2018). Emotionality in L2 teacher discourse: Implications for teacher education and future research directions. *Emotions in Second Language Teaching: Theory, Research and Teacher Education*, 301-321.

Gibson J J. (2014). *The ecological approach to visual perception: classic edition*. Psychology press.

Gielen S, Peeters E, Dochy F, et al. (2010). Improving the effectiveness of peer feedback for learning. *Learning and instruction, 20*(4), 304-315.

Guo Jidong, Zhou Mo, Liu Xiaohong. (2022). The Composition of English Learners' Sense of Value in Multiple Interactions and Its Relationship with Behavioural Input and Academic Achievement. *Foreign Languages and Their Teaching,* (05), 43-52.

Guo Q, Feng R, Hua Y. (2022). How effectively can EFL students use automated written corrective feedback (AWCF) in research writing?. *Computer Assisted Language Learning, 35*(9), 2312-2331.

Gyllstad H, Granfeldt J, Bernardini P, et al. (2014). Linguistic correlates to communicative proficiency levels of the CEFR: The case of syntactic complexity in written L2 English, L3 French and L4 Italian. *Eurosla yearbook*, *14*(1), 1-30.

Han Ye, Yang Luxin. (2021). A case study of non-English master's degree students' cognitive engagement with multiple drafts and multiple rounds of peer feedback. *Foreign Languages and Their Teaching*, (3), 92-101.

Hu G, Lam S T E. (2010). Issues of cultural appropriateness and pedagogical efficacy: Exploring peer review in a second language writing class. *Instructional science, 38*, 371-394.

Hu G. (2005). Using peer review with Chinese ESL student writers. *Language teaching research*, *9*(3), 321-342.

Huang, Lihe. (2021). Multimodal paradigms and foreign language teaching in the post epidemic era. *Contemporary Foreign*

Languages Studies, (1), 75-85.

Hunt K W. (1966). Recent measures in syntactic development. *Elementary English, 43*(7), 732-739.

Hyland K, Hyland F. (2006). Feedback on second language students' writing. *Language teaching, 39*(2), 83-101.

Kamimura T. (2006). Effects of peer feedback on EFL student writers at different levels of English proficiency: A Japanese context. *TESL Canada Journal*, 12-39.

Khushik G A, Huhta A. (2020). Investigating Syntactic Complexity in EFL Learners' Writing across Common European Framework of Reference Levels A1, A2, and B1. *Applied Linguistics, 41*(4), 506-532.

Knight J, Dooly M, Barberà E. (2020). Navigating a multimodal ensemble: Learners mediating verbal and non-verbal turns in online interaction tasks. *ReCALL, 32*(1), 25-46.

Kowal M, Swain M. (1994). Using collaborative language production tasks to promote students' language awareness. *Language awareness, 3*(2), 73-93.

Kyle K, Crossley S A. (2018). Measuring syntactic complexity in L2 writing using fine-grained clausal and phrasal indices. *The Modern Language Journal, 102*(2), 333-349.

Kyle K, Crossley S. (2016). The relationship between lexical sophistication and independent and source-based writing. *Journal of Second Language Writing, 34*, 12-24.

Larsen-Freeman D. (2006). The emergence of complexity, fluency, and accuracy in the oral and written production of five Chinese learners of English. *Applied linguistics, 27*(4), 590-619.

Laufer B, Nation P. (1995). Vocabulary size and use: Lexical richness in L2 written production. *Applied linguistics, 16*(3), 307-322.

Learning V. (2006). Research summary: Intellimetric scoring accuracy across genres and grade levels. *Retrieved February, 15*, 2011.

Lee I. (2017). *Classroom writing assessment and feedback in L2 school contexts*. Singapore: Springer Singapore.

Leeser M J. (2004). Learner proficiency and focus on form during collaborative dialogue. *Language teaching research, 8*(1), 55-81.

Lei Pengfei, Xu Jinfen. (2022). A study on the construction and application of interactive thinking scale for EFL learners under the perspective of multiple interaction. *Foreign Languages and Their Teaching*, (05), 66-77.

Lightbown P M, Han Z. (2008). Transfer appropriate processing as a model for classroom second language acquisition. *Understanding second language process, 27*, 44.

Link S, Mehrzad M, Rahimi M. (2022). Impact of automated writing evaluation on teacher feedback, student revision, and writing improvement. *Computer Assisted Language Learning, 35*(4), 605-634.

Liu J, Edwards J G H. (2018). *Peer response in second language writing classrooms*. University of Michigan Press.

Lizotte R. (2001). Quantifying progress in an ESL writing class. *MATSOL Currents, 27*(1), 7-17.

Long M H. (1983). Linguistic and conversational adjustments to non-native speakers. *Studies in second language acquisition, 5*(2), 177-193.

Long M. (1996). The role of the linguistic environment in second language acquisition. *Handbook of second language acquisition*.

Long M. (2014). *Second language acquisition and task-based language teaching*. John Wiley & Sons.

Lu X, Ai H. (2015). Syntactic complexity in college-level English writing: Differences among writers with diverse L1 backgrounds. *Journal of second language writing, 29*, 16-27.

Lundstrom K, Baker W. (2009). To give is better than to receive: The benefits of peer review to the reviewer's own writing. *Journal of second language writing, 18*(1), 30-43.

Lyster R, Saito K, Sato M. (2013). Oral corrective feedback in second language classrooms. *Language teaching, 46*(1), 1-40.

Lyster R, Saito K. (2010). Oral feedback in classroom SLA: A meta-analysis. *Studies in second language acquisition, 32*(2), 265-302.

Martínez A C L. (2018). Analysis of syntactic complexity in secondary education EFL writers at different proficiency levels. *Assessing Writing, 35*, 1-11.

Nelson G L, Carson J G. (1998). ESL students' perceptions of effectiveness in peer response groups. *Journal of second language*

writing, 7(2), 113-131.

Nelson G L, Murphy J M. (1992). An L2 writing group: Task and social dimensions. *Journal of second language writing, 1*(3), 171-193.

Nelson G L, Murphy J M. (1993). Peer response groups: Do L2 writers use peer comments in revising their drafts?. *TESOL quarterly, 27*(1), 135-141.

Paulus T M. (1999). The effect of peer and teacher feedback on student writing. *Journal of second language writing, 8*(3), 265-289.

Peng Nianfan. (2019). Research on human-computer-given interaction of university English learning platform. *Technology Enhanced Foreign Language Education*, (6), 25-32.

Pham V P H, Luong T K, Thi Thuy Oanh T, et al. (2022). Should peer E-comments replace traditional peer comments?. *Should Peer E-Comments Replace Traditional Peer Comments*, 295-314.

Polio C, Shea M C. (2014). An investigation into current measures of linguistic accuracy in second language writing research. *Journal of second language writing, 26*, 10-27.

Rahimi M. (2009). The role of teacher's corrective feedback in improving Iranian EFL learners' writing accuracy over time: is learner's mother tongue relevant?. *Reading and Writing, 22,* 219-243.

Ranalli J, Link S, Chukharev-Hudilainen E. (2017). Automated writing evaluation for formative assessment of second language writing: Investigating the accuracy and usefulness of feedback as part of argument-based validation. *Educational Psychology, 37*(1), 8-25.

Ruru T A N, Sulistyo T. (2020). Peer review in writing activities: outcomes and perceptions of EFL students. *Journal of Research on English and Language Learning (J-REaLL), 1*(2), 127-132.

Saeed M A, Ghazali K. (2017). Asynchronous group review of EFL writing: Interactions and text revisions.

Sarré C, Grosbois M, Brudermann C. (2021). Fostering accuracy in L2 writing: Impact of different types of corrective feedback in an experimental blended learning EFL course. *Computer Assisted Language Learning, 34*(5-6), 707-729.

Schmidt R W. (1990). The role of consciousness in second language learning. *Applied linguistics, 11*(2), 129-158.

Sheppard K. (1992). Two feedback types: Do they make a difference?. *RELC journal, 23*(1), 103-110.

Shermis M D, Burstein J C. (2003). *Automated essay scoring: A cross-disciplinary perspective*. Routledge.

Strijbos J W, Narciss S, Dünnebier K. (2010). Peer feedback content and sender's competence level in academic writing revision tasks: Are they critical for feedback perceptions and efficiency?. *Learning and instruction, 20*(4), 291-303.

Susanto S, Hidayati M. (2020). The Effect of Peer Review on Students' Motivation and Writing Ability. *IJOTL-TL: Indonesian Journal of Language Teaching and Linguistics, 5*(1), 1-14.

Tan S, Cho Y W, Xu W. (2022). Exploring the effects of automated written corrective feedback, computer-mediated peer feedback and their combination mode on EFL learner's writing performance. *Interactive Learning Environments*, 1-11.

Truscott J. (1996). The case against grammar correction in L2 writing classes. *Language learning, 46*(2), 327-369.

Tusino T. (2013). The Effectiveness of Peer Editing to Improve the Students' Essay Writing Skill.

Uymaz E. (2019). The Effects of Peer Feedback on the Essay Writing Performances of EFL Students. *International journal of curriculum and instruction, 11*(2), 20-37.

Van Lier L. (2000). From input to affordance: Social-interactive learning from an ecological perspective. *Sociocultural theory and second language learning*, 245.

Van Lier L. (2004). *The ecology and semiotics of language learning: A sociocultural perspective*. Dordrecht: Springer Netherlands.

Varonis, E. & S. (1985). Gass. Non-native/non-native conversations: A model for negotiation of meaning. *Applied Linguistics, 6*, 71-90.

Vygotsky L S, Cole M. (1978). *Mind in society: Development of higher psychological processes*. Harvard university press.

Waer H. (2023). The effect of integrating automated writing evaluation on EFL writing apprehension and grammatical knowledge. *Innovation in Language Learning and Teaching, 17*(1), 47-71.

Wang Fei. (2019). An analysis of the causes of ineffective peer interaction in academic writing classrooms — a case study based on the perspectives of four Chinese and foreign doctoral students. *Foreign Languages and Their Teaching*, (2), 92-99.

Watanabe Y. (2001). *Read-to-write tasks for the assessment of second language academic writing skills: Investigating text features and rater reactions*. University of Hawai'i at Mano.

Williams C. (2018). Language Input Effects on L2 Composition Peer Review Feedback. *TESOL International Journal, 13*(1), 33-46.

Wolfe-Quintero K, Inagaki S, Kim H Y. (1998). *Second language development in writing: Measures of fluency, accuracy, & complexity*. University of Hawaii Press.

Xu Jinfen, Long Zaibo. (2022). A study of learners' writing feedback input in a multiple interaction environment. *Foreign Language Teaching and Research*, (05), 21-31.

Xu Jinfen, Shu Jing. (2020). An empirical study of peer negotiation and interaction in university English classes in China. *Foreign Language Teaching and Research*, (6), 868-879+959-960.

Xu Jinfen. (2010). A study of foreign/second language classroom interaction at home and abroad. *Foreign Language World*, (3), 51-59.

Xu Jinfen. (2016). A study of peer scaffolding in group interaction in university English classrooms. *Foreign Languages and Their Teaching*, (1), 15-23.

Xu Jinfen. (2020). Peer interaction in online environment: research and reflection. *Contemporary Foreign Languages Studies*, (2), 52-60+83.

Yamada M. (2009). The role of social presence in learner-centered communicative language learning using synchronous computer-mediated communication: Experimental study. *Computers & Education, 52*(4), 820-833.

Yang Y F. (2010). Students' reflection on online self-correction and peer review to improve writing. *Computers & Education, 55*(3), 1202-1210.

Yu S, Hu G. (2017). Can higher-proficiency L2 learners benefit from working with lower-proficiency partners in peer feedback?. *Teaching in Higher Education, 22*(2), 178-192.

Yu S, Lee I. (2014). An analysis of Chinese EFL students' use of first and second language in peer feedback of L2 writing. *System, 47*, 28-38.

Yu S, Lee I. (2016). Understanding the role of learners with low English language proficiency in peer feedback of second language writing. *TESOL Quarterly, 50*(2), 483-494.

Yu Shulin, Zheng Yao, Yuan Kaihao. (2022). Disagreements and conflicts in multiple interactions in second language learners' writing classrooms — A phenomenological perspective. *Foreign Languages and Their Teaching*, (05), 32-42.

Zeng Gang, Gao Yang. (2022). A study on the interactive input of different levels of triads in an online multiple interaction environment: A collaborative writing task as an example. *Foreign Languages and Their Teaching*, (05), 53-65.

Zhang Shanjun. (2011). Reflections on Multiple Interactive College English Experimental Teaching. *Technology Enhanced Foreign Language Education*, (4), 78-80.

Zhang Z V, Hyland K. (2018). Student engagement with teacher and automated feedback on L2 writing. *Assessing Writing, 36*, 90-102.

Zhang Z V, Hyland K. (2022). Fostering student engagement with feedback: An integrated approach. *Assessing Writing, 51*, 100586.

Zhu W. (2001). Interaction and feedback in mixed peer response groups. *Journal of second language writing, 10*(4), 251-276.