Weblog-mediated peer editing and some pedagogical recommendations: A case study

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As a medium for facilitating improvement in **EFL** learners' writing, weblogs hold great potential. This study investigates blog-based electronic feedback (e-feedback) with respect to linguistic characteristics, accuracy levels, and revision rates, in the hope of discussing possible pedagogical recommendations for a blog-based English writing environment. The participants comprised thirty undergraduate students from a university in northern Taiwan. These students participated in a blog project, which required them to respond to essays written by others as well as posting their own work on weblogs. Data was mainly collected from those learners' writing assignments and e-feedback. Peer comments were analyzed to sound out the linguistic characteristics and accuracy levels of e-feedback and subsequent revisions in writing. Results showed that **EFL** students commented on writing in a rather unbalanced manner, highlighting micro-level and weakening macro-level components. Also, the accuracy level of comments provided did not significantly predict student revision. Considering the results, it is recommended that students be provided with peer-editing training before the outset of peer editing on **CMC** modes, and be encouraged to collaborate with peers in a moderate or large group size for weblog-based peer-editing.

Introduction

The role of technology is crucial in providing learners a channel to practice their writing skills and convey the fruits of their labor to others (Hincks, 2003; Hyland, 2003). In recent years, discussion on peer feedback in L2 writing research has aroused strong interest in the use of computer-mediated

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communication (**CMC**). **CMC** can be defined broadly in relation to asynchronous communication and synchronous communication, which differ primarily in the immediacy with which a message is delivered. On asynchronous **CMC** platforms such as email the processes of sending and receiving do not take place at the same time, meaning they are less time-constrained. On the other hand, synchronous **CMC**, like online 'chat' systems and videoconferencing, features instant messaging and can only operate when both sides are connected to form an immediate interaction mode (Abrams, 2006). Despite differing in the immediacy of messaging, both **CMC** environments offer superior support for learning **L2** writing.

Of the two major **CMC** types, asynchronous interaction may come closer than its counterpart to providing an ideal means of peer collaboration in computer-mediated writing. Focusing on **CMC** as applicable in distant education, Thompson (1993, p. 226) claimed that asynchronous would be more appropriate for remote collaboration than synchronous **CMC**, because asynchronous technology "allows students and the teacher to take their time, to read others' writing at their convenience, and to answer as the spirit moves them", while synchronous interaction like conferencing was often found to be "clumsy, time-consuming, potentially hostile, and extremely difficult to organize and coordinate." In **L2** composition classrooms, since students often need ample time to produce quality comments, asynchronous technology might have better potential to provide writing assistance.

Weblogs, a thriving information sharing mechanism, have particularly stood out among asynchronous communication platforms in recent years. Weblogs (also called web logs or blogs) can be defined as a news- and journal-sharing platform, on which bloggers freely share their postings with readers from around the world. In a recent Pollster online survey in Taiwan (Liaw, 2007), the vast majority of the internet users surveyed either had a personal weblog (47.3%) or a high interest in having a weblog in the near future (41.7%). Only 14.7% of the respondents expressed a reluctance to join the weblog community. This vigorous blog-writing phenomenon has therefore encouraged a growth of research investigating how weblogs can be adopted in **L2** writing classrooms. Such research has pointed out the linguistic and affective benefits of using weblogs in **ESL/EFL** writing classes (e.g., Duber, 2002; Hourigan & Murray, 2005; Wang, 2007).

Weblogs and second language writing

Research on weblogs has documented the benefits of adopting weblogs to aid development in **L2** writing. Duber (2002) is one of those who foresaw the potential of blog writing in education. He affirmed that weblogging was a potential course supplement or textbook supplement because of its interactive nature and increasing prevalence. Campbell (2003) also highlighted that the collaborative reader-writer interaction on blogs could provide learners with a channel for frequent online verbal exchange with others. A separate, six-month blog project conducted by Hourigan and Murray (2005) in which **L2** learners wrote weekly journals on blogs sharing their experiences, strategies, motivations, and needs in learning a second language provided further examination. Throughout the project, those learners showed better reading and writing skills, growing motivation in dealing with language tasks, and higher self-reflection upon their learning strategies.

Two studies conducted in Taiwan have also evidenced the effectiveness of using weblogs in **L2** writing classes. In work focused on using weblogs as a peer-editing platform, Wang (2007) compared **EFL** learners' perceptions of participating in peer editing activities either on blogs or face-to-face. The findings demonstrated that blog-based peer editing gave

learners more effective support than traditional oral interaction. Learners felt less frustrated and more respected by their peers during the peer editing process. Also, they perceived peer comments as being more detailed and accurate on the blog platform. Likewise, Lin (2007) also demonstrated that weblogs could be used as a medium for writing. In her study, Lin investigated Taiwanese college students' perceptions of a weblog-based writing project and their writing itself. Students were required to participate in a thirty-six week writing project, and their journal entries and writing products were analyzed with respect to lexical richness and sentence complexity. Students' overall perceptions of the use of weblogs for writing were also discussed. Results showed that most of the students held a positive attitude towards the use of multimedia such as weblog to facilitate writing. Nevertheless, students' unfamiliarity with the interface design of multimedia also drew some criticisms concerning its use.

Rationale behind this study

Along with the increased prevalence and accessibility of weblogs, a growing body of literature has suggested some promising opportunities concerning its pedagogical use in L2 writing classes (e.g., Hourigan & Murray, 2005). Prior research has evidenced the linguistic and affective benefits of using weblogs in ESL/EFL writing classes. Of all the pedagogical applications of weblogs in L2 writing classes, empirical research has also noticed that weblogs may be used as an effective peer-editing platform. However, much of the literature on weblogs highlights data collected through questionnaires, and there has been little research investigating student writers' editing behaviors and writing comments to support the practicality of weblogs in second language writing. Nevertheless, peer feedback has great impact on writing improvement. Research into how L2 learners generate writing comments and how those comments influence revisions thus merits close consideration.

The central part of this study aims to investigate how L2 learners process comments and what problems they might encounter in blog-mediated peer response activities by means of a case study method. Three major issues in L2 feedback were studied, namely, the linguistic characteristics of comments, the accuracy of comments, and revision changes incorporated in writing, which have been widely studied in L2 writing with respect to writing quality (e.g., Berg, 1999; Chandler, 2003; Min, 2006). The guiding questions in the current study ran as
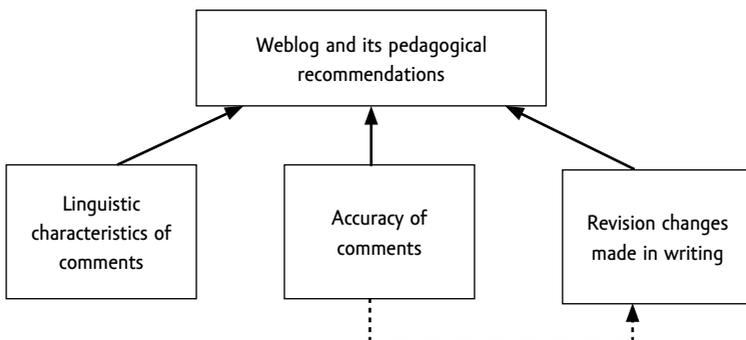

Figure 1. Current research status   **31**

follows: (1) What distribution of linguistic characteristics is found in students' blog-mediated e-feedback? (2) How accurate are student comments produced on weblogs? (3) How do students respond to comments of varying levels of accuracy when making revisions? It is hoped that this study can provide a comprehensive analysis of how students produce and manipulate e-feedback on the weblogs, so as to investigate the pedagogical limitations that weblog-mediated peer editing activities or the like may encounter. The findings of this case study will extend to provide pedagogical recommendations to L2 writing teachers who are implementing weblog-mediated writing projects in their own classes.

Methodology

Participants

The study involved thirty undergraduates at a university in Taiwan. These learners, aged from 19 to 21 years, were recruited from three departments in the same university. Most of the participants were from junior sections, while a minority was from either sophomore or senior sections. During the study, these students were enrolled in an elective one-semester course entitled Reading and Writing in English, which aimed to improve students' reading skills and to equip them with some basic concepts of how to write an organized and coherent paragraph in English. Since this course was a two-credit course, the teacher researcher and the participants met two hours per week. In each class, the second hour was always allocated for a writing session, in which the teacher discussed major writing components and utilized various writing activities so as to help the students improve their writing composition skills.

Weblog

To maintain the consistency of blog interface designs in this study, the participants were expected to apply for a blog site at Blogger (http://www.blogger.com). The blog hosting website, Blogger, was chosen primarily for its convenience of application. In addition, a blog directory containing hyperlinks to each participant's blog was designed by the researcher, so that every participant could have easy access to the blogs of others.

Data collection procedures

This study involved two major phases: a ten-week writing session and a four-week blog project. Because the participants were not English majors, they had not received any formal training in English writing before taking this course. The researcher thus allocated the first ten weeks to equip them with some basic writing concepts about the organizational patterns in English writing. Eight major topics were discussed, including the structure of English writing, the writing process, prewriting activities, topic sentences, supporting ideas, conclusions, logical order, and how to write cause-and-effect paragraphs. Also, in-class and out-of-class writing exercises were given to the participants on a regular basis. In addition, to establish the learners' commenting skills, the researcher often displayed anonymous student samples using Microsoft PowerPoint to guide learners to correct errors at both micro (e.g., punctuation, word, collocation, and grammar) and macro levels (e.g., text organization, logical connection) as a regular classroom practice.

Following the ten-week writing session, the students took part in a four-week blog project. In the first week, a training session was provided with the focus on explaining to the students the basic concepts of peer editing and detailed linguistic features they could comment on. A handout that presented the purposes of and recommended rules for peer editing was provided and discussed. Then the researcher guided the class to respond to a sample student essay displayed on Microsoft PowerPoint. The class was led to locate errors at both micro and macro levels to make them aware that their peer comments could target various linguistic levels. After the demonstration, the participants discussed their previous writing assignment in groups of four to five people for exercise. As an assignment in the first week, the researcher required the students to write a one-paragraph composition on the topic "After-school Jobs."

For the blog project, the students were assigned to argue their viewpoints about whether college students should take any after-school jobs. This topic required the students to express their arguments in prose, thus allowing the students to make the best use of what they had learned about writing cause-effect essays. In addition, the topic was selected according to selection criteria that included contextual familiarity, situational familiarity, experiential familiarity of learners (Katchen, 1994), the specificity and conciseness of topic (McCabe & Bender, 1976), and the informative or persuasive features of topic (Nelson & Pearson, 1990). This topic was perceived as being able to elicit more reflective attitudes from the students.

In the second week of the blog project, the students came to class with their first draft. As was regular classroom practice for them, they self-edited their writing silently without any peer assistance. After class, they posted their writing on their blog. Each student was required to read and respond to other students' writings online for the coming two weeks, and comments could be made in either Chinese or in English to minimize the potential interference of language in the process. Also, the learners could decide whether comments were posted with their real name shown or anonymously. In the fourth week, all students were required to hand in a writing assignment that included the pre-treatment draft (the first draft), classmates' comments on the pre-treatment draft, and the post-treatment draft (the second draft).

Data analysis

The aim of this study was to discern the linguistic functions and accuracy levels of peer comments, and the effect of peer comments on writing revision. To make this account as clear as possible, a series of quantitative methods, including chi-square analysis and test of homogeneity proportions, were adopted in this study. An introduction was given to discuss the classification of linguistic comments and accuracy levels in the following.

Linguistic Functions of Peer Comments. To identify each "feedback point" in reader comments (Hyland & Hyland, 2001), the coding scheme designed by Shi (2001) was utilized in this study. Shi provided detailed directions for how comments could be analyzed based on their targeted linguistic levels. Five major categories involving a total of twelve subcategories were developed to determine the specific quality of comment in each category (see Table 2). Her categorization of feedback functions allowed the current study to investigate which linguistic characteristic was favorably highlighted in peer comments on blogs. The

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researcher further moved *comments on essay length* to the category of *language,* discussing both sentence length and essay length (see Appendix).

Following Shi's (2001) study, the current study mainly used "key-word analysis" to identify each individual feedback unit in peer commentaries. Key-word analysis focused on identifying short phrases, usually an adjective and a content word combination (e.g., strong argument, and clear points), in comments. For instance, in (1) the identified feedback units are "great writing," "clear arguments," "high-quality passage," and "less frequent words," which can be sorted into three sub-categories on Shi's coding scheme respectively.

1. Your **writing** is **great**. Your **arguments** are **clear**. The **entire passage** looks very **high-quality**. You used many **less frequent words**.

   General comment on overall quality: *Great writing*
   Specific comments on arguments of the content: *Clear arguments*
   General comments on overall quality: *High-quality passage*
   General comments on word use: *Less frequent words*

All comments were double-coded by two raters for reliability. The raters analyzed the first ten individual commentaries[1] independently, and then discussed with each other to establish agreement between them. After that, they coded the rest of the commentaries independently. However, disagreements on how to categorize a feedback point sometimes occurred, and the few discrepancies were resolved through discussion.

Accuracy of Peer Comments. To determine the accuracy of peer comments, two experienced writing teachers measured whether or not each feedback unit was accurate. The first teacher, who is a native speaker of English, judged all feedback units that had been translated by the researcher, while the second teacher, a native writing teacher in a university, also judged all of the data for inter-rater reliability. Scoring was based on the grading rubric as shown in Table 1, ranged from 1 *Incorrect comments,* 2 *Unnecessary comments,* 3 *Partially correct comments,* and 4 *Correct comments.*

Table 1: Scoring rubric for accuracy of comments

Label	Item	Description
4	Correct comment	A correct comment contains a correct identification of an error with/without a suggestion.
3	Partially correct comment	A partially correct comment accurately identifies the location of an error but provides an inappropriate suggestion for revision.
2	Unnecessary	An unnecessary comment indicates that a change should be made, although the writer has not made any error. Or, it indicates a suggestion for revision, but the original is not problematic, and it is as good as the suggested one.
1	Incorrect comment	The comment may wrongly identify an error with an inappropriate suggestion for revision, or simply an inappropriate suggestion for revision that does not improve the writing but worsens it.

Results

Linguistic features of blog-mediated peer comments

In total, 89 commentaries,[1] based on 30 separate essays, were analyzed. After an in-depth text analysis, a total of 422 feedback units were discovered (r = .99). Descriptive statistics for the 12 functions are summarized in Table 2.

Table 2: Descriptive statistics for the linguistic functions of peer comments

Major Categories	Sub-categories	Feq[a]	Feq[b]
General	General	21 (4.98)	21 (4.98)
Content	General	9 (2.13)	101 (23.93)
	Ideas	31 (7.35)	
	Arguments	61 (14.45)	
Organization	General	10 (2.37)	70 (16.59)
	Paragraphs	28 (6.64)	
	Transitions	32 (7.58)	
Language	General	7 (1.66)	230 (54.50)
	Intelligibility	27 (6.40)	
	Accuracy	146 (34.60)	
	Fluency	44 (10.43)	
	Length	6 (1.42)	
Total		422	

Note: Feq[a] = frequency of each subcategory. Feq[b] = frequency of each major category
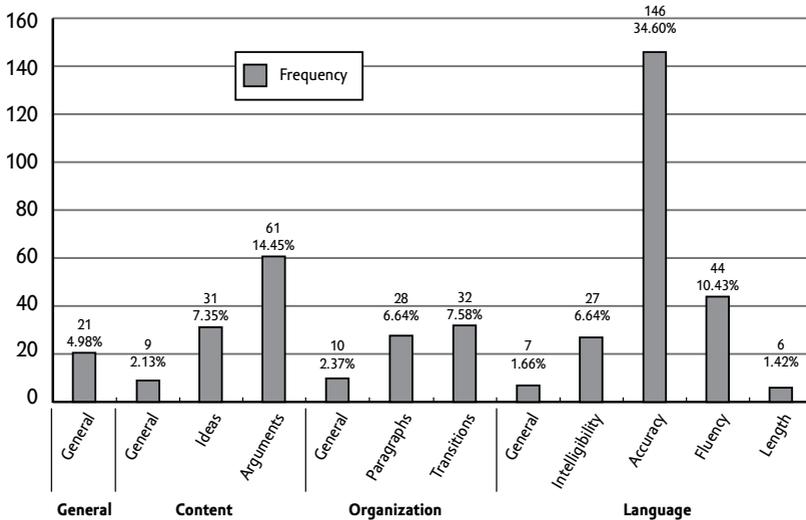Numbers in parentheses show percentages.

Figure 2. Number and percentage of feedback unit by type   **35**

Of all the 422 feedback units, most of them focused on *language* (54.50%), followed by *content* (23.93%), *organization* (16.59%) and *general comments on overall quality* (4.98%). This reveals that the participants were prone to respond to the language of the writing more than the other characteristics. More specifically, the researcher further investigated the sub-categories and compared the 12 individual functions. Items with the highest percentages among this student population were *comments on the accuracy of language* (34.60%), *comments on arguments* (14.45%), *comments on the fluency of language* (10.43%), *comments on transitions* (7.58%), and *comments on paragraphs* (6.64%). In addition, items with the five lowest percentages included *general comments on overall writing quality* (4.98%), *general comments on organization* (2.32%), *general comments on content* (2.13%), *general comments on language* (1.66%), and *comments on length* (1.42%). The results showed that the participants focused on the language and content of the writing more than other features in the peer editing process. Their comments either pointed out whether the word use or sentence was grammatically appropriate, whether language was fluent, or whether the writer's arguments were well supported. However, *general comments on the overall writing quality* such as "well written" and "good writing" were the least mentioned, having a much lower percentage than that of the other major categories.

Closer scrutiny showed that the participants were more focused on language accuracy, arguments, and language fluency, each of which had a percentage above 10 per cent, more than other issues. This revealed that the participants showed the strongest motivation to point out a writer's problem with word use, grammar and, mechanics, and to give suggestions to solve their problems. They also took account of whether arguments were well supported and developed, and whether the language was fluent with an appropriate voice. Furthermore, compared to general comments in any of the major categories, comments with a specific focus (e.g., ideas, arguments, paragraphs, etc.) had higher percentages.

Accuracy of blog-mediated peer comments

Central to this study is the important link between the accuracy level of linguistic comments and subsequent revision changes. For this purpose, we first attempted to investigate to what extent linguistic e-feedback was accurate. Prior to this analysis, it is vital to uncover comments whose accuracy can be measured. According to Hyland and Hyland (2001), comments can be categorized into three major functions, namely, praise, criticism, and suggestion. When being defined, praise is described as being used to give credit to "positively valued" skills or characteristics in writing, and is principally employed for expressing agreement rather than correction (p. 186). On the other hand, criticism and suggestion feedback both highlight weaknesses in learners' writing, with the only difference being that suggestion units (also referred to as "constructive criticism") will offer direct recommendations for improvement (p. 186). Of these three feedback types, praise was mainly based on one's positive evaluation, and it was the least likely to be measured on an accuracy level. In contrast, criticism and suggestion are weakness-oriented, and are therefore more apt to be judged in terms of accuracy. Thus, all of the 422 comments were categorized based on Hyland and Hyland's (2001) taxonomy. For the subsequent discussion on accuracy of comments and revision changes, praise was excluded and our discussion was primarily restricted to comments that contained either criticism or suggestions. In this vein, all 149 identified praise units (35.3%) were excluded from discussion, and the 72 criticism units (17.1%) and 201 suggestion units (47.63%) were analyzed. After praise units were excluded from the data

pool, the remaining 273 feedback units were judged by two raters for accuracy based on the scoring rubric (kappa coefficient = 0.78, $p < .05$). Any disagreements between the two raters were later solved through consultation with another Chinese-speaking writing teacher, who was doing her PhD in applied linguistics at the time of this study.

Table 3: Accuracy of the linguistic functions of peer comments

Major Categories	Sub-categories	Praise	Criticism	Suggestion
General	General	19	1	1
Content	General	9	0	0
	Ideas	21	7	3
	Arguments	38	6	17
Organization	General	10	0	0
	Paragraphs	5	8	15
	Transitions	13	9	10
Language	General	3	3	1
	Intelligibility	12	11	4
	Accuracy	5	17	124
	Fluency	14	7	23
	Length	0	3	3
	Total	**149**	**72**	**201**

Table 4 shows the accuracy distribution of each linguistic comment type. A high percentage of student comments (76.6%) were found to be either correct or partially correct. However, it is worth noting that 11.7 per cent, approximately 12 out of 100 comments, were found to be misleading.

Table 4: Interaction of linguistic characteristics and accuracy levels

Major categories	Sub-categories	Incorrect	Un-necessary	Partially correct	Correct	Total
General	General	0	0	1	1	2
Content	General	0	0	0	0	0
	Ideas	3	2	1	4	10
	Arguments	2	4	0	17	23
Organization	General	0	0	0	0	0
	Paragraphs	6	1	3	13	23
	Transitions	5	1	2	11	19
Language	General	0	0	1	3	4
	Intelligibility	4	0	8	3	15
	Accuracy	8	16	24	93	141
	Fluency	4	6	5	15	30
	Length	0	2	0	4	6
	Total	**32 (11.7)**	**32 (11.7)**	**45 (16.5)**	**164 (60.1)**	**273**

Note: Numbers in parentheses show percentages.

Effects of accuracy of comments on revision changes

To investigate how accuracy levels interact with revision rates, two raters read all the feedback units containing criticism or suggestion thoroughly and marked those that resulted in revision changes (kappa coefficient = .84, *p* < .05). Revision was determined by whether the original structure in the first draft changed in the second draft as a result of the comment received. If the structure changed in the second draft, the feedback unit was then counted as having had an impact on the revision. Results showed that, out of the total 273 feedback units, 210 units (76.9%) were found to lead to revision changes, while 63 units (23.1%) did not cause any revision. This indicates that a high percentage of student comments resulted in revision of drafts.

After the revising effects of student comments were evaluated, a series of statistical analyses were then computed to test how the four types of accuracy levels differed in their respective revision rates. To assess the impact of accuracy levels on revision, a test of homogeneity proportions was administered. However, as Table 5 reveals, it should first be noted that a relatively high percentage of incorrect comments (62.5%) were incorporated into student writing. Statistical results further showed that the four accuracy types of comments were not significantly different with respect to the revision changes they caused (X^2 = 5.402, *p* > .05). This hints that the accuracy levels of student comments did not predict revision changes. In other words, the participants in this study attempted to incorporate comments indiscriminately regardless of whether comments were accurate or misleading.

Table 5: Accuracy Level and Incorporation of Comments

Accuracy Level	Incorporation	No incorporation	Total
Incorrect	20 (62.5)	12 (37.5)	32
Unnecessary	23 (71.9)	9 (28.1)	32
Partially correct	35 (77.8)	10 (22.2)	45
Correct	132 (80.5)	32 (19.5)	164
Total	**210 (76.9)**	**63 (23.1)**	**273**

Note: Numbers in parenthesis show percentages.

Discussion and Conclusions

The first research question investigated the distribution of linguistic characteristics in students' blog-mediated e-feedback. This study found that the participants attended to linguistic traits in an unbalanced manner throughout the online peer review process. This unbalanced distribution is also in keeping with those shown in Keh's (1990) and Hyland's (2003) studies. According to Keh and Hyland, learners paid more attention to surface-level features such as lexical and grammatical errors than global-level ones. Although their findings were concerned with the non-CMC mode, the findings of this study supported theirs in a broad sense that our participants also put more emphasis on language than content and organization of a writing product. Such a high percentage of *comments on languages* might suggest that the participants were comparatively inattentive when it came to macro-level components.

The second research question investigated the extent to which student comments on weblogs were accurate enough to provide reliable assistance. Most of the student comments were considered correct or partially correct, while approximately twenty percent of student comments were found to be unnecessary or incorrect. Since the participants in this study were intermediate learners and novice writers of English, unnecessary and incorrect comments likely came as a result of their limited English proficiency and undeveloped competence in writing. This finding suggests the need to equip EFL students with the ability to give accurate comments in weblog-mediated peer editing activities.

The third research question explored whether accuracy of comments had an impact on student revision. The results showed that accuracy of comments did not impact revision. That is, the participants did not incorporate comments because of their respective accuracy levels. However, from another perspective, this result also hints that the participating student writers tended to take in both incorrect and correct comments indiscriminately throughout the revision process. This may be the direct result of students' limited English proficiency, which does not allow them to distinguish which comments are trustworthy or misleading. Since accuracy levels failed to predict writing revisions, future research may take a further step to explore what factors would influence students' decision to give and incorporate certain types of comments, or to ignore those comments in CMC modes.

Taking these findings together, this study has shown that, when it comes to blog-mediated peer-editing, accuracy levels and revision rates were independent from one another in this case study. When EFL learners were participating in this specific CMC peer-editing activity, subsequent revision changes were not determined by the accuracy levels of their comments. These non-significant correlations may be derived from the participants' limited English proficiency and writing competence. Because the participants were intermediate proficiency learners and beginners in terms of academic writing, their undeveloped general proficiency and writing competence did not equip them with the ability to determine which comments were accurate. In this sense, they gave and incorporated correct, partially correct, incorrect, and unnecessary comments.

Implications for CMC peer-editing activities

As this study has shown, EFL students commented on their peers' writing in a rather unbalanced manner. This may underline the importance of initiating moderate peer-editing training before peer-editing activities are engaged in. In the peer editing process, one important factor lies in learners being instructed in how to comment, particularly when learners demonstrate a fairly unbalanced distribution of comments. Training students to give comments can not only improve feedback quality but also teach them how a passage can be composed and analyzed. In computer-mediated classroom practice, training students how to edit their peers' writings plays a vital role in equipping them with the ability to comment.

Teachers may draw students' attention to at least four types of comments in the training session: general content of the writing, responding to the writer's arguments, commenting on the textual organization, and pointing out problems with the language. The first type, general comprehension of the writing, highlights the communication of ideologies between the writer, the writing product, and the reader. Readers should be encouraged to obtain a full picture of the writing, identify the writer's arguments, and comment on the clarity of messages in the text. The second type of comment concerns reader response to the writer's own stance. Readers can show their agreement or disagreement with arguments the writer **39**

makes. Third, comments on textual organization pertain to whether information is given in a clear and coherent order, for instance, whether the transition words help build up coherence between ideas or paragraphs. The fourth type of comment points out faults with the language, in which readers give comments on surface-level features such as vocabulary and grammar. With these four types of comments kept in mind, learners may be capable enough to take account of both global-level and surface-level features in the peer editing process.

Another issue worth noting is the discovery made during this study that all four types of comments, regardless of accuracy, did to some extent trigger revisions in student's second drafts. That is, the participants in this study tended to incorporate unnecessary, incorrect, partially correct, and correct comments indiscriminately throughout the revision process. This finding reveals the need to equip students with the ability to evaluate the accuracy of peer comments and to screen incorrect advice from their peers. To achieve this goal, it is necessary first to develop the competence of students in terms of grammar and vocabulary. Once their grammar and vocabulary competences are mature, they should be able to determine whether peer comments on grammar and vocabulary are trustworthy or misleading. On the other hand, as shown in our data pool, reviewer debates sometimes occur with respect to a certain error pointed out by one reviewer but rejected by another reviewer. The occurrence of reviewer debates may be considered beneficial to writers in the sense that reviewers not only provide writers with different directions for revising, but help evaluate each other's comments for writers. Thus, to encourage reviewer inter-evaluation, it would be necessary for CMC peer-editing activities to be carried out cooperatively in medium-size or large groups.

Limitations of this study and suggested research

This study addresses the linguistic characteristics of e-feedback, and the ways in which L2 learners incorporated e-feedback into revision. Nevertheless, this study has the following limitations. It is important to keep in mind that the researcher's demonstration in the training session may have had some impact on the learners' objectives and performances in the subsequent online peer editing activity. In this study, although the researcher guided learners' attention towards a variety of linguistic levels, the danger is that he might have failed to treat each linguistic level (e.g., vocabulary, grammar, arguments, cohesion, and coherence) fairly in the demonstration, so that the learners' attention might have been directed more towards those the instructor highlighted. Second, since the participants in this study were intermediate learners but novice writers of academic writing, their limited English proficiency and writing competence may have influenced the linguistic characteristics and accuracy of comments, and revision changes in writing. Thus, future research may be carried out on different proficiency groups to investigate whether the same results are still obtained. Third, time constraints limited the learners to only two weeks of blog-based peer review. The students might need more experience of online peer reviewing to get used to this type of interaction mode before embarking on any future study. In addition, at the beginning of this article, the researcher hypothesized that accuracy levels of student comments might have a significant impact on writing revision. However, the results of this study have shown that it was not a significant predictor of revision. Future studies may set out to investigate what factors would influence student's choice of revision on CMC modes. Finally, this study only addresses EFL learners' editing behavior on the blog-mediated edit-

ing platform; therefore, future research may be directed to investigate how learners behave differently in other CMC and regular face-to-face situations.

Note

1. In this study, to avoid confusion between 'comment' and 'commentary', we use 'commentary' to refer to a complete response entry that a student leaves on a certain passage, while 'comments' and 'feedback units' are used interchangeably because a feedback unit is a peer comment by its nature.

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Appendix

Categorization of the Functions of Peer Comments

Major Categories	Subcategories	Definitions	Examples
General	General	General comments on overall quality of writing	– Well written. – The passage looks very high-quality. – This passage is very convincing.
Content	General	General comments on content	– I understand what you want to express. – The content is rich.
	Ideas	General or specific comments on ideas and topic sentence	– Writing based on your own educational background successfully expressed your true feelings. – Your topic sentence was excellent.

Major Categories	Subcategories	Definitions	Examples
	Arguments	General or specific comments on aspects of arguments such as balance, use of comparison, counter arguments, support, uses of details or examples, clarity, unity, maturity, originality, relevance, logic, depth, objectivity, conciseness, development and expression.	– Your arguments supported the topic sentence very well. – You need to give more reasons why you are in favor of taking after-school jobs. – You used four examples to support your standpoint. This was quite abundant. – Your examples were quite appropriate. – Using examples is a good way to support your arguments
Organization	General	General comments on organization	– Your writing has good organization. – The organization of your writing is clear.
	Paragraphs	Comments on the macro level concerning introduction, body, and conclusion	– You should use two or three more sentences in the conclusion, to avoid making your writing top-heavy. – You should not share with the readers your own experiences in the first paragraph. It is supposed to be in the second paragraph.
	Transitions	Comments on the micro level concerning transitions, coherence, and cohesion	– The topic sentence and the conclusion consisted with each other. – Use signal words as much as you can. – Arrange your ideas coherently. – You should use transition words to help readers understand the overall organization of your writing quickly.
Language	General	General comments on language	– The grammar in your writing is simple. – This sentence seems to be grammatically strange. – You use some difficult words.
	Intelligibility	Comments on whether the language is clear or easy to understand and follow	– Your writing is very easy to comprehend. – After reading your passage, I still do not understand what you think of taking after-school jobs.

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Major Categories	Subcategories	Definitions	Examples
	Accuracy	General comments on accuracy or specific comments on word use, grammar and mechanics	– In the sentence "We may spend lots of time taking the job that we don't have much time to study", there should be a "so" before "that". – "…taking part-time jobs are important…" "are" has to be changed to "is". – It's better to use "convenience stores" rather than "7-11".
	Fluency	Comments on fluency, conciseness, maturity, naturalness, appropriateness, and vividness of language	– The use of "so if" sounds like Taiwanese English, so I think it is better to use either "so" or "if". – The passage is very fluent from beginning to end.
	Length	Comments on whether a sentence is too long or too short or whether the writer has fulfilled the word limit	– This sentence is so long that it is very tiring to read it. – Every supporting sentence can be lengthened.

Note: Examples were originally in Chinese and later translated by the researcher for the purpose of judgment on the accuracy by the English-speaking writing teacher.