

Error Correction in College EFL Writing Instruction: Students' Expectations and Correction Effects¹

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The growing body of research on corrective error feedback in the past two decades has been mostly carried out in the ESL context and has concluded its effectiveness, with controversy remaining regarding its effects on EFL learners. The present study was set in the college EFL context. A survey at the beginning of the study suggested that students preferred indirect error correction where instructors underline errors and indicate error types at the same time. The one-semester experiment focused on the effects of two types of indirect error correction regarding seven treatable errors. The results showed that both types of indirect error correction were effective as the number of errors per hundred words decreased significantly in the post-test. In the delayed post-test, the group that received coded error correction maintained a significant improvement in language accuracy compared with the pre-test, suggesting that underlining errors coupled with providing error codes has better delayed effects. However, some types of errors showed an increase in frequency from the pre-test to the delayed post-test, despite the significant decrease in the total number of errors.

Keywords: error correction, indirect correction, error correction

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Introduction

Enhancing second language acquisition has always been of great importance to language instructors. The Noticing Hypothesis proposed by Schmidt (1990) argues that learners' awareness of the differences between their interlanguage and the target language (i.e., "noticing") is "the necessary and sufficient condition for converting input to intake" (p. 129). According to this theory, error correction (also known as written corrective feedback or grammar correction) is beneficial as it draws learners' attention to language form.

However, Truscott's (1996) survey study concluded that error correction was "ineffective" and even "harmful" (p. 328), thus triggering a wave of research on error correction in the past two decades. So far, most studies have found evidence for the effectiveness of error correction on ESL learners, but the relatively few studies focusing on EFL learners have produced inconsistent results. The present study aims to add to the latter body of research by examining college-level EFL learners' expectations and effects of instructors' error correction of seven target structures.

Literature Review

Studies on error correction mostly focus on ESL learners, and research questions concern instructors' perception of error correction, learners' needs of error correction, and most of all, the effectiveness of error correction (i.e., whether or not error correction helps learners improve language accuracy).

Evans, Hartshorn, and Tuioti (2010) conducted a survey among 1053 ESL and EFL writing instructors and found that 92% of the instructors would provide some sort of error correction, the top three reasons being that 1) it helps bring students' attention to language and improve their ability to correct and understand errors, 2) students expect it, and 3) students need it. Regarding students' preferences on how instructors give written corrective

feedback, Chandler (2003) reported that learners preferred direct correction, whereas most other studies (Hong, 2004; Komura, 1999; Rennie, 2000) found that learners preferred indirect feedback with codes or labels.²

The most important and controversial topic in error correction research is correction effects. The independent variables of these studies include correction methods (direct correction vs. indirect correction, which can be further divided into highlighting error positions and highlighting error positions coupled with describing error types; focused vs. unfocused correction), error types (treatable errors or untreatable errors; morphological, syntactic, or vocabulary errors). The dependent variable is usually correction effects, categorized into immediate effects, short-term effects, and long-term effects, and operationalized as language accuracy.³

Studies on immediate effects examine students' revisions after error correction is given. Most studies have found that error correction helps improve language accuracy in the revisions compared with the absence of error correction (Ferris, 2006; Ferris & Roberts, 2001; Hong, 2004; Truscott & Hsu, 2008; van Beunigen, de Jong, & Kuiken, 2012), and that direct error correction has better effects than indirect correction (Chandler, 2003; Han, 2012; Liu, 2008). Hong (2004) found that groups that received teacher feedback did significantly better in self-correction than groups that did not, and that there was no big difference in terms of the effectiveness between the two indirect correction methods of highlighting error positions and indicating error types.

There have also been studies on the impact of error correction on new writes after error correction is provided, usually within an interval ranging

² Bitchener, Young and Cameron (2005), Komura (1999), and Rennie (2000) concluded that students preferred direct correction, but Ferris, who directed the two theses, made it clear that students "prefer indirect feedback with error codes or labels attached over either direct teacher correction or errors being simply marked but not labeled" (Ferris & Roberts, 2001, p. 166). The researcher wants to thank Ferris for her clarification.

³ Ferris (2006) talked about two types of effects: "effects in the short run (from one draft of a paper to another) and in the long run (from the beginning to the end of a writing course" (p. 82).

from a couple of weeks to a couple of months. Part of Chandler's (2003) study concluded that both direct correction of errors and indirect correction of highlighting error positions were more effective in helping learners write a new assignment more accurately than indirect correction of describing error types. Bitchener, Young, and Cameron (2005) found that written feedback combined with individual conferencing produced significantly greater accuracy than the treatment of written feedback or the absence of feedback, when simple past tense and definite article errors were involved. Bitchener's (2008) study on the English article system showed that error correction was more effective in improving the accuracy of article use in the immediate post-test than the absence of it, and the effects lasted as long as two months. Ellis, Sheen, Murakami, and Takashima (2008) found that focused and unfocused correction of article errors helped learners improve their accuracy in new writes two weeks after the treatment, but the control group's performance also improved. When a delayed post-test was given four weeks later, the groups receiving error correction performed significantly better than the control group. van Beuningen, de Jong, and Kuiken (2012) found that written corrective feedback improved accuracy in new writes one week and four weeks after error correction was delivered. Bitchener and Knoch (2010) concluded that corrections of article errors helped advanced learners improve accuracy in the use of articles. However, Truscott and Hsu (2008) found that the new writes produced by the experiment group one week after error corrective feedback was given were not significantly different from the new writes done by the control group that did not receive any error correction.

Several studies have been conducted to test the long-term effects of error correction over the span of one semester. Chandler (2003) found that instructors' error correction followed by learners' self correction had better effects than instructors' correction only. Bitchener, Young, and Cameron's (2005) one semester study reported that through one semester, the group which received written feedback plus conferencing improved in their overall performance as well as the use of prepositions and definite articles. Ferris (2006) concluded that providing error feedback contributed to a significant

reduction in learners' errors, verb errors, and lexical errors. In the Chinese context, Chen and Li (2009) concluded that while both direct and indirect correction helped improve student writers' language accuracy, the effects of direct correction was significantly better. Wang and Hu (2010) found support for indirect error correction in improving language accuracy compared with the absence of teacher feedback. The study by Han (2012), which focused on the use of simple past tense, however, found no statistical support for the long-term effectiveness of direct or indirect correction.

To sum up, more studies published in recent years point to the effectiveness of corrective error feedback. To be fair, the positive effects that error correction contributes to students' rewrites are not unexpected; it is hard to imagine that learners fail to improve language accuracy when they write a new draft with instructors' corrective feedback, especially, when direct error correction is involved. The most important question, however, is the effects of instructor error correction on new writes, especially new writes after systematic error correction is provided for a certain period of time—in other words, the long-term effects of error correction—and it is here where findings diverge.

Truscott's (1996) review of error correction studies featuring EFL learners concluded that error correction was not only "useless" but even "harmful" (p. 328). As a reply, Ferris (1999), citing Hedgcock and Lefkowitz's (1994) research, suggested that it was a result of the low motivation EFL learners had in revising their writings. Guénette (2007) also suggested that motivation and language proficiency be better controlled. Table 1, which lists studies of short-term and long-term effects of error correction, shows that the findings regarding ESL learners are mostly positive, but there is little comparability between ESL and EFL learners, since the former receive a great amount of language input besides classroom language instruction. For EFL learners, the short-term and long-term effectiveness of corrective feedback is less certain. More studies that target EFL learners are, therefore, needed.

TABLE 1
Recent Studies on the Short Term and Long Term Effects of Error Correction

Study	Duration	Context	Effectiveness	Operationalization of accuracy
Chandler (2003)	Short-term Long-term	ESL	Yes for direct correction and indirect correction of highlighting positions; No for describing error types	# of errors per 100 words in autobiographical writings
Bitchener et al. (2005)		ESL	Yes for direct correction with conferencing	# of correct usage of target structures in informal letters
Ferris (2006)	Long-term	ESL	Yes for direct and indirect correction	# of errors in reading- based persuasive writings
Bitchener (2008)	Short-term	ESL	Yes for direct correction alone or together with other forms of correction	% of correct usage of the target structure/# of obligatory occasions in picture description
Ellis et al. (2008)	Short-term	EFL	Yes for direct correction, effects clearer in delayed post-tests	# of correctly supplied articles/ # of obligatory occasions
Truscott & Hsu (2008)	Short-term	EFL	No for indirect correction	# of errors/ number of words in narrative writings
Chen & Li (2009)	Long-term	EFL	Yes, more so for direct correction than indirect correction	# of errors/ number of words in argumentative writings
Bitchener & Knoch (2010)	Short-term	ESL	Yes	Correct article usage, picture description of what was happening
Wang & Hu (2010)	Long-term	EFL	Yes for indirect correction	Errors per clause, expository writing
Han (2012)	short-term	EFL	Yes, lasting one week for direct correction; No for the week later	Correct use of simple past tense

van	Short-term	ESL	Yes	# of words per 10 words
Beuningen				
et al. (2012)				

Another issue concerns the research methods used. The effects of error correction in the literature were usually operationalized as language accuracy (errors per hundred words, for instance). In Table 1, we can see that all the studies attempted to ensure the comparability between the writings before and after the treatment, either by examining errors in the writings of the same nature (narrative or expository) or errors in the target structure. The former approach, however, may still produce some problems because if the new writing is on a different topic, it could elicit different language in terms of word choice, grammar, and tense, for instance. Besides, for studies looking into language accuracy in general rather than target structures, the results may be misleading, as amenability of errors to correction may vary depending on the error type. It was under these backgrounds that the present study was carried out.

Research Methodology

The present study examines the needs of Chinese EFL learners regarding corrective feedback as well as the effectiveness of instructor error correction on certain target structures.

Research Questions

The current study aims to answer the following three questions.

- 1) What are Chinese college EFL learners' needs regarding instructor error correction?
- 2) What are the effects of one-semester instructor error feedback on

certain treatable errors?

- 3) Is there a difference in effects between different kinds of error correction on certain treatable errors?

Participants and Setting

The study was carried out in the spring semester of 2012. Participants were non-English majors of Class 2014 taking their last compulsory English course. At the instructor-researcher's university, all non-English majors are required to take a maximum of four semesters of English. At the end of their second and third semesters, an English proficiency test is administered, and students who pass the test do not need to take any English course in the following semesters.

The English course in the first three semesters is integrative in nature, covering the four major skills of reading, listening, writing, and speaking. In the last semester, several elective English courses are offered, including Reading, Writing, Listening and Speaking, Interpretation, Public Speaking, and Business English. The instructor-researcher offered English writing to 3 classes of 115 students in the semester when this study was carried out. The course lasted 16 weeks, and students met 4 class hours per week. There were no other English courses for these students.

Research Procedure

Concerning the first research question, a questionnaire survey was given at the beginning of the semester to get an understanding of students' needs, including their needs regarding instructor's error correction.

The experiment to answer the second and third research questions lasted one semester. During the semester, students finished five writings. Except the first piece (exemplification), which involved one draft only, for the other four (classification, comparison and contrast, argumentation, and personal statement), students finished three drafts. Teacher feedback toward the first

draft centered on content and structure only, and error feedback was given on the second draft, based on which students finished their third draft and received a score.

Considering that most studies concluded better long-term effects for indirect error correction, the instructor-researcher adopted two types of indirect error correction: 1) highlighting error position and 2) highlighting error position and providing error codes. A list of error codes, based on Skwire and Wiener's (1999) error list, was handed out to students in the first class. There were altogether twenty two errors, each with a code, an explanation, and an example. The following are two error types on the list of error codes:

***agr** – errors in subject-verb agreement, pron agreement*

e.g. 1) He play computer games every day.

2) Students should realize that in college you are responsible for setting your own schedules.

***frag** – fragmentary sentence, i.e., Not a sentence*

e.g. 1) We had many blessings. Like love, nature, family.

2) Jill is absent from class. Because he is ill.

Target Structure

Whereas feedback was provided for all errors on students' five assignments, the present study examines the effects of indirect correction on seven treatable errors only. As is defined by Ferris (2002, p. 23), a treatable error is "related to linguistic structure that occurs in a rule-governed way." It can be treated by students "because the student writer can be pointed to a grammar book or set of rules to resolve the problem." An untreatable error, on the other hand, is "idiosyncratic," and to correct it, students "need to utilize acquired knowledge of the language."

The seven treatable errors in question are *agr* (agreement errors), *frag* (sentence fragments), *P* (punctuation errors, mostly in run-on sentences), *vb*

(verb form errors), *wc* (word class errors), and *art* (article errors). For students in Class A, their errors were underlined with error codes provided; however, for students in Class B and C, the seven treatable errors were underlined only and no error codes were provided.

In this way the study compares the effects of two indirect corrections on seven treatable errors.

Data Collection and Variables

The data used for the present study are from 31 participants, 15 from Class A, called the "Error Code group," and 16 from Classes B and C, called the "Error Position group." These 31 participants were selected, for they had been in the instructor-researcher's class the semester before, and their writings in the final exam of the previous semester were used as the pre-test of the present study.

The effects of indirect error correction were examined from two perspectives: 1) a comparison of the number of the seven treatable errors in the pre-test, post-test, and the delayed post-test, and 2) students' correction of their pre-test errors in the post-test, which is grouped into three categories: successful correction, no correction, and unsuccessful correction. For instance, the following sentence appeared in the pre-test writing of a participant.

Being poverty does not means disgrace and failure.

In the post-test, it was changed into:

Being poverty does not mean disgrace and failure.

In the self-correction, the student failed to change *poverty* into *poor*, so this is considered as a case of no correction, but she changed *means* into *mean*, which counts as one successful correction of verb form.

The delayed post-test was the writing in the final exam of the semester administered about ten days after the self-correction post-test. It was administered in the same exam situation as the pre-test, where students were to finish a 250-word argumentative paper.

The statistical tests involved in the study were conducted with SPSS 17.0.

Results and Discussion

Considering that language proficiency is an important factor impacting learners' ability of error correction, a *t*-test was run on 1) the two groups' language proficiency, operationalized as their scores in the university English Language Proficiency Test (composed of three parts: listening, reading, and writing) at the end of the previous semester and 2) the number of the seven treatable errors in the pre-test. The results are presented in Table 2.

TABLE 2.

English Language Proficiency of the Two Groups Before the Study

	<i>n</i>	Proficiency test score (std. dev.)	<i>t</i> -test (sig.)	# of errors per 100 words(std. dev.)	<i>t</i> -test (sig.)
Error Code group	15	49.47 (8.53)	-0.38 (0.39)	3.04 (1.38)	1.30 (0.21)
Error Position group	16	50.75 (9.42)		2.38 (1.46)	

As can be seen from Table 2, the average score of the Error Code group was 49.47, slightly lower than that of the Error Position group, but the probability suggests that there is no significant difference between the two groups in English language proficiency. The number of errors in question per hundred words of the Error Code group was 3.04, higher than 2.38 for the Error Position group, but still the difference is statistically insignificant, indicating that the two groups were of roughly the same English proficiency

at the beginning of the experiment.

Learners' Needs Regarding Instructor Corrective Feedback

There were five options in the questionnaire survey on learners' need of instructor error feedback: 1) direct correction with the correct expression given; 2) indirect correction with errors underlined; 3) indirect correction with errors underlined and error codes provided; 4) no need for error feedback; 5) others (please specify). The results showed that all the learners expected some kind of error correction. 20.8% preferred direct correction, and the rest 79.2% favored indirect correction, of which 12.9% expected instructors to underline errors, and 66.3% expected a combination of underlining errors and providing error codes.⁴

The results are contrary to Chandler's (2003) finding but consistent with what was reported in Komura (1999), Rennie (2000), and Hong (2004): ESL learners preferred indirect correction from instructors with error codes or labels, which suggests that they want to correct those errors with some guidance from the instructors.

Effects of Indirect Error Correction (Repeated Measure ANOVA)

Figure 1 shows the number of errors of the two groups in the pre-test, post-test, and delayed post-test. It is clear from the pattern that both groups witnessed a decline in the semester.

⁴ The present study compares the effects of the two indirect corrections rather than the top two preferences of the learners for the reason that indirect correction, as opposed to direct correction, has been found to have better long-term effects and is less time-consuming.

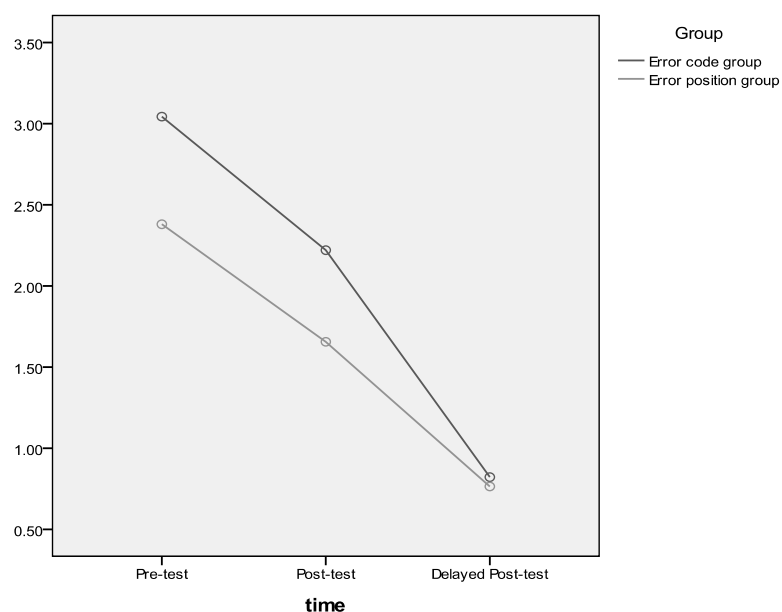


Figure 1. The two groups' number of errors per 100 words in the three tests.

Figure 1 shows a downward pattern for both groups in the number of errors per 100 words for the three tests. A repeated measures ANOVA with a Greenhouse-Geisser correction showed that the mean language accuracy differed statistically significantly among the three different time points ($F(1.42, 41.16) = 43.33, p < 0.00$), suggesting that indirect correction helps improve language accuracy. No interaction effects between time and group were found ($F(1.42, 41.16) = 1.23, p = 0.30$). The test of between-subjects effects suggests no statistically significant difference between the Error Code group and the Error Position group ($p = 0.18$).

In what follows, *t*-tests are run to further examine the details of error correction effects.

Effects of Indirect Error Correction (*t*-test)

Pre-test writing vs. post-test writing.

To look into the effects of indirect error correction, the instructor-researcher had participants correct their pre-test writings at the end of the experiment, and two variables were studied: the number of the seven treatable errors per 100 words and the results of participants' self-correction.

Number of the seven treatable errors per 100 words.

Table 3 compares the number of the seven treatable errors per 100 words in the pre-test and post-test writing.

TABLE 3
Error Correction Effects (Number of Errors per 100 Words in Pre-test and Post-test Writings)

	<i>n</i>	Pre-test (std dev.)	Post-test (std dev.)	<i>t</i> -test	Sig.
Error Code group	15	3.04 (1.38)	2.22 (1.13)	4.07	0.00
Error Position group	16	2.38 (1.46)	1.66 (1.00)	3.97	0.00

After a semester's error correction experiment, the number of the seven treatable errors dropped from 3.04 to 2.22 for every 100 words for the Error Code group, and from 2.38 to 1.66 for the Error Position group, both changes being statistically significant.

Participants' self correction.

In the pre-test writing, there were 212 cases of the seven error types in question, with 6.8 errors on average per person. Table 4 lists the number of each error and their correction results.

TABLE 4
Error Correction Effects (Pre-test Errors and Self-correction of Errors in the Post-test)

Error type	Number (% of all errors)	Successful correction (%)	No correction (%)	Unsuccessful correction (%)
agr	68 (32.08%)	17 (25%)	49 (72.06%)	2 (2.94%)
art	22 (10.38%)	4 (18.18%)	17 (77.27%)	1 (4.55%)
frag	5 (2.34%)	1 (20%)	4 (80%)	
P	22 (10.38%)	7 (31.82%)	15 (68.18%)	
T	44 (20.76%)	17 (38.64%)	27 (61.36%)	
vf	22 (10.38%)	6 (27.27%)	16 (72.73%)	
wc	29 (13.68%)	5 (17.24%)	23 (79.31%)	1 (3.45%)

Of the seven error types, the greatest number of errors were agreement errors, 68 in total, accounting for 32.08% of all the errors observed. The next two greatest were tense errors (20.76%) and word class errors (13.68%). The tense error received the highest rate of successful correction (38.3%), followed by the punctuation errors (31.82%) and verb form errors (27.27%). The lowest rate of correction was in word class errors, 17.24%. On the other hand, 80% of the sentence fragments remained unchanged, followed by the word class errors (79.31%) and article errors (77.27%). Very few cases of wrong corrections were found.

After one semester's error correction, both groups had a significant drop in the seven treatable errors per 100 words, supporting the effects of indirect correction. At the same time, it is worth noting that the rate of successful correction of pre-test errors by the participants in the post-test varied between 17.24% and 38.64%, depending on the error types, which is far less satisfactory, as the majority of the errors remained uncorrected, or possibly unnoticed.

If we examine individual performance in self-correction, we find that some participants managed to correct some of a certain error type, but rarely all of them. For instance, of the 31 participants, 25 made some agreement errors,

varying between one and nine errors per person. Of these participants, 11 left all their agreement errors uncorrected; three had a successful correction rate of 100%, but they all made only one error of agreement. For the remaining 10 participants, they corrected some of the agreement errors. Why was there such a big difference? For the first group of participants who failed to correct any agreement error, we can conclude they have a poor mastery of this grammar rule, but what about the last group? To answer these questions further studies are needed.

Pre-test writings vs. delayed post-test writings.

Number of errors per 100 words.

As post-test writings were simply a correction of the pre-test writings, the study also tried to examine whether a semester's instructor error correction helped students with language accuracy of the new writes in the delayed post-tests.

TABLE 5

Error Correction Effects (Number of Errors per 100 Words in Pre-test and Delayed Post-test Writings)

	<i>n</i>	Pre-test (std dev.)	Post-test (std dev.)	<i>t</i> -test	Sig.
Error Code group	15	3.04 (1.38)	2.23 (1.26)	2.24	0.04
Error Position group	16	2.38 (1.46)	2.13 (1.02)	0.64	0.54

Table 5 above shows that the number of the seven treatable errors in question decreased for both the Error Code group and the Error Position group, from 3.04 to 2.23 and from 2.38 to 2.13, respectively, and it is with the former that the decline proves to be statistically different. Therefore, the findings suggest that the coded error correction has better delayed effects than the indirect correction of highlighting error positions only.

Number and distribution of errors in the delayed post-test.

The average writing in the delayed post-test was 263 words long, higher than the 252 words in the pre-test. 183 errors of the seven types in question were found, about 5.9 per participant, lower than the 212 errors and 6.8 average on the pretest. Table 6 compares the error distribution in the delayed post test as well as the pre-test.

TABLE 6
Distribution of Errors and Percentage in the Pre-test and the Delayed Post-test

Error type	Pre-test	Delayed post-test
agr	68 (32.08%) 1	78 (42.62%) 1
art	22 (10.38%)	28 (15.3%) 2
frag	5 (2.34%)	5 (2.73%)
P	22 (10.38%)	17 (9.29%)
T	44 (20.76%) 2	16 (8.74%)
vf	22 (10.38%)	20 (10.93%) 3
wc	29(13.68%) 3	19 (10.38%)

The No. 1 error type on the delayed post-test was still the agreement error, the same as the pre-test, but its percentage among all errors climbed from 32.08% to 42.62%. The second and third most frequent errors were article errors and verb form errors, respectively, which were different from the pre-test (in the pretest, the 2nd and 3rd greatest number of errors were tense and word class, as shown in the 2nd column). The instructor-researcher believes that the different rankings are attributable to the different writing topics. The writing task in the delayed post-test concerned curriculum design, and some participants made article errors when listing different courses such as *the history*, *the philosophy* instead of *history* and *philosophy*.

Although the total number of the errors in question decreased from the

pre-test to the delayed post-test, statistically significant for the coded error group, the sudden surge of errors in agreement leaves one questioning the positive effects of error correction. Most agreement errors involve the missing of *-s* for third-person singular, or the unnecessary addition of verb-end *-s*, as shown in the following examples. These are a result of negative transfer from the Chinese language.

- *It (the policy under discussion) help student develop better in future.*
- *I think humanities courses is good for ourselves and our future.*

However, considering that agreement is one of the very first grammar rules introduced in elementary school English course and that extensive error correction feedback was provided by the instructor-researcher, the prevalence of agreement errors was unexpected.

Different Effects of the Two Different Indirect Corrections (*t*-test)

The above analysis shows that the two groups, the Error Code group and the Error Position group, have roughly the same performance in the post-test, with a significant decrease in the number of errors from the pre-test, but it is the coded error correction that produces better delayed effects. The present section examines the differences between the two groups (i.e., whether the two different types of indirect corrections make a difference in term of effects). Table 7 shows the inter-group difference regarding self-correction in the post-test, and Table 8 shows the inter-group difference in number of errors per 100 words.

TABLE 7
Differences in Correction Effects Between the Two Indirect Correction Methods (Self-correction in the Post-test)

	<i>n</i>	Rate of correct correction	t stats. (sig.)	Rate of no correction	t-test (sig.)
Error Code group	15	0.24	-0.27	0.75	0.18
Error Position group	16	0.26	(0.79)	0.73	(0.86)

TABLE 8
Differences in Correction Effects Between the Two Indirect Corrections (Number of Target Error Types per 100 Words)

	Post-test	t-test (sig.)	Delayed post-test	t-test (sig.)
Error Code group	2.22		2.23	
Error Position group	1.66	1.48 (0.15)	2.13	0.31 (0.58)

Table 7 shows that in the post-test the rate of successful correction for the Error Code group is lower than that of the Error Position group (23.75% vs. 25.89%), whereas the rate of no correction is higher (74.58% vs. 73.42%), but neither of the differences is statistically significant. In terms of the number of the seven treatable errors per 100 words, Table 8 shows no significant difference between the two groups in the post-test writing (2.22 vs. 1.66) or the delayed post-test writing (2.23 vs. 2.13). It can, therefore, be concluded that the two indirect error correction methods (highlighting error positions and highlighting error positions combined with providing error codes) do not have significant differences in effects regarding treatable errors, which corroborates Robb, Ross and Shortreed's (1986), Chandler's (2003), and Hong's (2004) findings; that is, when instructors give error correction, highlighting error positions suffices to draw learners' attention. On the other hand, coded error correction has better delayed effects, given the results in Table 5.

The present study done in the EFL context lends support to the

effectiveness of (indirect) error correction, which aligns with the findings of Ellis et al. (2008), Chen and Li (2009), and Wang and Hu (2010), but contradicts those of Truscott and Hsu (2008) and part of Han (2012). One important reason for this discrepancy is that of these studies, the current one, Chen and Li's (2009) and Wang and Hu's (2010) studies are all long-term studies, where students received teacher feedback in four, eight, and twelve writings, respectively, and they were all required to do a rewrite for every paper. The other three previous studies, however, lasted three weeks only, and students in the experimental groups received error correction for just one paper. The intensive error correction and students' rewrites over one semester produced better results as expected. Of the three studies on short-term effects, Ellis et al.'s (2008) study and part of Han's (2012) study concluded the positive effects of error correction, when direct correction was involved. For Han (2012), the positive effects of direct correction lasted one week only, and the indirect correction did not prove effective, not even for one week, similar to Truscott and Hsu's (2008) conclusion.

Concluding Remarks

The present study focuses on Chinese EFL learners' needs of instructor error correction and the effects of error correction. It is found that the majority of learners prefer indirect error correction from instructors, particularly, correction by highlighting error positions and explaining error types.

The indirect error correction of the present study targets seven treatable errors. The participants performed a self-correction of their pre-test writing in the post-test and a new writing on the delayed post-test. A comparison of the pre-test and post-test shows that the number of the seven treatable errors per 100 words for both groups declined significantly from pre-test to post-test writing. In the delayed post-test, the language accuracy of the Error Code group remained significantly better than the pre-test, but the improvement for

the Error Position group was insignificant. Our study confirms the long-term effectiveness of indirect error correction where instructors indicate the error position and provide error codes.

However, an equally important, if not more important, message from the present study is that simply looking at the number of errors in aggregate does not reveal the whole picture. If we look at the actual number of errors from the pre-test to the post-test, we see that the rate of successful correction of the target errors was rather low, ranging from 17.24% to 38.64%, whereas the rate of no correction varied between 61.36% and 80%. And although the total and average number of errors in the delayed post-test declined, some errors actually increased, and this somehow discounts the effectiveness of error correction, or at least suggests that the amenability of errors to instructor correction varies.

Considering the long-term effectiveness of indirect error correction, language instructors are advised to provide indirect corrective feedback over an extended period of time, a semester for instance, to help learners improve their language accuracy. They should also carry out focused correction, as unfocused correction may conceal the differences between different error types in their amenability to instructor feedback. For future research, it is necessary to look into individual differences, since teacher feedback produces different effects on students. Whereas some students are able to self-correct their errors and produce fewer errors in new writes as a result of instructor error corrections, others still have difficulty identifying their errors and continue to make errors in new writes.

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