

The Intra- and Inter-task Effectiveness of Direct and Indirect Written Corrective Feedback

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The last several decades have seen a continual growth of research on written corrective feedback (WCF) addressing the debate over whether and to what extent the learners' improvement triggered by WCF can indicate second language acquisition (SLA). Also at issues are such pedagogical concerns as what types of WCF should be provided and what language errors WCF can effectively treat. To contribute to the current understanding of WCF, the present small-scale exploratory study investigates (a) whether direct and indirect WCF differently affect learners' use of simple past tense in a picture-strip narrative writing; and (b) whether learners' gains (or losses) can be transferred to an autobiographical writing exercise where WCF was not provided. Twelve low-intermediate EFL learners were randomly divided into a direct WCF group, an indirect WCF group, and a control group, to complete three test occasions, each of which consisted of an in-class and an out-of-class writing assignment. The results indicated that while direct WCF can effectively improve learners' use of simple past tense in the same task, the gains are more likely to be transferred to a different writing text in the long run when learners receive indirect WCF.

Key words: written corrective feedback, direct WCF, indirect WCF, simple past tense

INTRODUCTION

The Intra- and Inter-task Effectiveness of Direct and Indirect Written Corrective Feedback

Written corrective feedback (WCF), also known as error correction (Truscott, 1996), is widely employed by L2 teachers, and is highly appreciated by L2 learners as an effective device to provide negative feedback and to reduce learners' errors in writing (e.g., Evans, Hartshorn, & Tuioti, 2010; Hedgcock & Lefkowitz, 1994; Hyland, 2003; Leki, 1990). However, the role of WCF has become considerably controversial, since Truscott (1996) dismissed WCF as "ineffective or harmful" (p. 328) in enhancing learners' long-term writing ability. According to Truscott (1996, 1999, 2007), WCF does not affect L2 competence, but, at best, improves a manuscript. An opposing camp of researchers maintained that WCF can enhance learners' writing abilities by tapping into their implicit knowledge (e.g., Ferris, 1999, 2004, 2006, 2010) and can serve as an instructional tool to facilitate SLA (e.g., Bitchener & Knoch, 2009; Ellis, Sheen, Murakami, & Takashima, 2008; Sheen, 2007).

While evidence in support of WCF has been rapidly growing (e.g., Bitchener, 2008; Bitchener, Young, & Cameron, 2005; Chandler, 2003; Ferris, 2006; Sheen, 2007, 2010), empirical research inspired by the theoretical debate has not yielded conclusive findings. A series of modulating variables have been identified to limit the comparability and generalizability of empirical findings. These variables include the research design, populations, pedagogical contexts, and lengths of WCF treatment (e.g., Ferris, 2010; Storch, 2010). Among these variables, the explicitness of WCF (or the types of WCF) has drawn great attention from researchers for its rich potential to mediate learner engagement and the learning outcomes (e.g., Bitchener, 2008; Chandler, 2003; Ferris, 2006; Ferris & Roberts, 2001; Sheen, 2007). Nevertheless, it is still unclear which type of WCF is more conducive to SLA, and under what conditions. This article hopes to contribute to the current research on WCF by reporting a small-scale experimental study investigating learners' use of simple past tense over time in a written, picture-strip narrative task where WCF was provided, as well as in an autobiographical writing task where WCF was absent. By comparing performance of learners who were provided with

direct WCF, indirect WCF, or no WCF, the present study examines how the explicitness of WCF modulates learners' gains from WCF.

BACKGROUND LITERATURE

The Effectiveness of WCF: Pseudolearning or Acquisition

One of Truscott's counter-arguments to the value of WCF is that learners' improvement triggered by WCF should be pseudolearning, defined as "a superficial and transient form of knowledge" failing to restructure their interlanguage system (p. 345). The distinction between pseudolearning and acquisition is in line with the distinction between two dimensions of acquisition: accumulating knowledge about L2 and developing control over the use of L2 in real time (Johnson, 1996; Sharwood Smith, 1986). The development of L2 knowledge does not necessarily translate to effective L2 performance; therefore, the improvement resulted from WCF can be of "little value for actual use of the language" (Truscott, 1996, p. 345). Truscott also claimed that learners may simply transcribe and incorporate teacher corrections without an actual, deep understanding, so that the chance for the pseudoknowledge to affect learners' use of L2 further diminishes.

Truscott's point concerning the possibility of pseudolearning is quite compelling given the inconsistent learner performance in subsequent writing assignments and in self-editing tasks (e.g., Fathman & Walley, 1990; Ferris & Roberts, 2001). Even findings of the studies incorporating both revision and subsequent writings are highly divergent. Ferris (2006) discovered a significant reduction of errors after providing WCF in every second draft of three essays. Nevertheless, Truscott and Hsu (2008) found learners' improvement in revision was not transferred to a new writing task.

While the role of WCF in developing learners' L2 writing/editing abilities is still under debate, there has been a rapidly growing body of evidence in support of WCF as an instructional technique to facilitate SLA of specific language structure(s) (Bitchener, 2008; Bitchener & Knoch, 2009; 2010; Bitchener et al., 2005; Ellis et al.,

2008; Sheen, 2007, 2010). Compared to L2 writing studies, SLA research on WCF adopted a strictly controlled design, with a pretest and posttests, a control group, and a highly-limited range of rule-governed target structures. More importantly, to eliminate the confounding effect of pseudolearning, editing/revision was replaced by subsequent writing tasks to test learning outcomes more effectively. Ellis et al. (2008) found that Japanese EFL learners' use of articles significantly improved from the pretest to the immediate posttest, which consisted of an error correction task and a new writing assignment. Bitchener and Knoch's (2009, 2010) longitudinal studies involving five different picture narrative tasks reported that WCF significantly enhanced learners' mastery of articles. The effects of WCF in facilitating acquisition of articles were also borne out by Bitchener (2008) and Sheen (2007, 2010).

The highly controlled research design, although it enables plausible and reliable comparisons across studies, can, at best, marginally reflect authentic classroom settings (Storch, 2010). While writing tasks incorporated in one study as test instruments share similar instructions, materials, and timeline, those in classrooms can be much less repetitive. Writing assignments may be completed individually, cooperatively, with or without external resources, with or without a designated time limit. Therefore, it would be theoretically and pedagogically valuable to investigate whether the effect of WCF can be sustained not only over time, but also across different tasks with different conditions such as time limits and available resources.

Differential Effectiveness of WCF Types: Direct WCF and Indirect WCF

Researchers and teachers have long been aware that WCF can be provided in different levels of explicitness (e.g., Ferris & Roberts, 2001; Lalande, 1982; Robb, Ross, & Shortreed, 1986; Semke, 1984). At the two ends of the continuum of explicitness are two distinct types of WCF: direct WCF and indirect WCF. Direct WCF, usually in the form of the deletion and/or insertion of morphemes, words, phrases, or sentences (Ferris, 2006), accommodates both negative evidence and positive evidence. It helps learners to restructure their form-meaning mapping (e.g.,

Long, 1996). On the other hand, by indicating the occurrence of an error but withholding target forms, indirect WCF requires learners to revise errors independently, which is believed to engage learners in “guided learning” and “problem solving” (Lalande, 1982, p. 140).

However, the empirical findings have yet to show a consensus on which type of WCF is more effective. While Lalande (1982) found a slight superiority of indirect WCF over direct WCF, the other two studies (Semke, 1984; Robb et al., 1986) showed no differential effects of direct and indirect WCF. Chandler (2003) provided learners with direct WCF, indirect WCF, and error description with underlining. Although direct WCF was the most effective in reducing long-term errors, indirect WCF also functioned significantly better than error descriptions. Participants claimed that they learned more from indirect WCF, although direct WCF was preferred due to greater convenience in conducting revisions. Therefore, rather than embracing direct WCF and dismissing indirect WCF, Chandler concluded that the effectiveness of different WCF types also depends on the purpose of teachers and students. Similarly, Ferris (2006) mentioned that the superiority of either WCF type is not universal but interacts with learner variables, such as L2 proficiency. Given that most studies were conducted in ESL settings with college students of intermediate English proficiency (e.g., Bitchener, 2008; Bitchener & Knoch 2009; Chandler, 2003; Ferris, 2006; Sheen, 2007, 2010), future research with learners in EFL contexts would enrich the current understanding of the effectiveness of different WCF types.

Target Language Structures

Another critical decision that teachers often encounter in L2 classrooms is which categories of errors should be treated with WCF. While early research on WCF mostly provided WCF to an extensive scope of linguistics errors, recent studies have predominantly focused on English articles (Bitchener, 2008; Bitchener & Knoch, 2009; Bitchener et al., 2005; Ellis et al., 2008; Sheen, 2007; Sheen et al., 2009). Such a converging focus on English articles as the target form is not a coincidence. Ferris (1999) categorized errors into “treatable”, rule-governed

structures, such as verb tense or form, subject-verb agreement, and pronouns (Ferris, 2006), and “untreatable” errors (Ferris, 1999, p. 6), including word choice and idioms, and sentence structures (Ferris, 2006). Therefore, being strictly governed by rules yet commonly misused by L2 learners, the referential indefinite *a* and referential definite *the* comprise as an ideal high-frequency linguistic form to research on.

Nevertheless, given that findings on English articles *per se* may fail to draw meaningful generalizations (Ferris, 2010; Storch, 2010), WCF research on other language structures is very much in need. Bitchener et al.’s study (2005) helped to expand the scope of target structures by incorporating simple past tense and prepositions. Participants had significant short-term gains with both articles and simple past tense, but not preposition. Thus, simple past tense can be considered another structure possibly amenable to WCF. Further research building on Bitchener et al.’s findings would not only be theoretically meaningful in examining the effect of WCF on various linguistic structures, but also pedagogically valuable, since simple past tense is commonly inaccurately or inappropriately used, despite learners having learned it in their early stages of English learning.

Research Questions

The current small-scale exploratory study sets out to explore the role of direct and indirect WCF in facilitating SLA as manifested in learners’ use of simple past tense in a writing assignment where WCF is provided (intra-task effectiveness), as well as in a different writing text where WCF is not provided (inter-task effectiveness). The goal of the current study leads to two research questions:

1. Does the effectiveness of direct and indirect WCF differ in enhancing the accurate use of simple past tense in a picture-strip narrative task (Task 1)?
2. Can the effectiveness (or the ineffectiveness) of direct and indirect WCF demonstrated in Task 1 be transferred to an autobiographical writing task (Task 2)?

METHOD

Design

The present experimental study adopted a pretest-posttest-delayed posttest design and incorporated two narrative tasks each time the test was given. An intact class with 18 students was involved in the research. Participants were randomly assigned into three groups: a direct WCF group, an indirect WCF group, and a control group. The pretest, the immediate posttest, and the delayed posttest were conducted in Week 2, Week 3, and Week 5, respectively. Table 1 gives the specific schedule of the study.

TABLE 1
Procedure of the Study

Study Schedule	Activity	
Week 1: Preparation	Homework: Read & Draw	
Week 2: Pretest	Task 1 (in-class writing)	Task 2 (out-of-class writing)
Week 3: Immediate Posttest	Treatment Task 1 (in-class writing)	Task 2 (out-of-class writing)
Week 5: Delayed Posttest	Task 1 (in-class writing)	Task 2 (out-of-class writing)

Each test occasion incorporated two tasks: an in-class picture-strip narrative task and an out-of-class autobiographical task with a question prompt. All students completed both tasks for the pretest, the immediate posttest, and the delayed posttest. Task 1 required students to rewrite a story of a graphic designer's career path. The story was adapted from an authentic text from the Internet (Lu, 2009) to ease the vocabulary load and to avoid the structures that had not been taught in class. One week before the pretest, students read the story as homework and drew comics based on the plot, which was a means to check participants' comprehension. In the following week, the teacher collected the students' drawings, chose the one that best illustrated the plot, and displayed the images onto the screen with an overhead projector. Students then rewrote the story in class with the help of the comic strip.

problematic verb forms. For regular verbs, the teacher underlined the space immediately after the verb, indicating that a morpheme was missing; for irregular verbs, the teacher underlined the whole verb:

(2) *I get my first job after I graduate_ from college.*

When receiving drafts with WCF from the teacher, participants had five minutes to study their initial draft with WCF. Since participants were in the same class, the control group received their intact draft and also had five minutes to study. The teacher did not require participants to edit the draft after the treatment, and the immediate posttest started after the initial draft with WCF was collected.

Participants

Since some students failed to attend every test, the final recorded results consisted of 12 EFL learners with low intermediate English proficiency from the same Chinese University English class. All were college freshmen majoring in art and design. Four participants were native Chinese Mandarin speakers, while others were native Cantonese speakers. There were three males and 15 females. Participants were homogeneous in terms of English proficiency according to their performance on a placement test administered at the semester's start. It should be noted that China's college entrance examination sets a much lower requirement on English proficiency for art and design students. As a result, despite having had at least six years of formal EFL classes, most of the participants had only a high-beginner to low-intermediate level English proficiency.

Setting

Art and design majors in the university where the study was completed attended an English for Art program, a curriculum designed for art and design students with low English proficiency stressing real-life tasks related to their professions. The program includes three levels from English for Art (EA) 1 to EA 3. All participants were from the same class in EA 2. Students attended two two-hour sessions of EA 2

class each week. The first session was a “language class”, which was taught by a non-native teacher, with a central focus on language forms such as grammar and vocabulary along with training in reading, listening, speaking and writing. The second session, scheduled one or two days later, was a “content class”, taught by a native-speaking teacher with a more content-based teaching approach, paying only marginal attention on language forms. The current study took place exclusively in the language class.

Data Coding and Analysis

The effectiveness of direct and indirect WCF was assessed based on how accurately learners used simple past tense in two narrative tasks over three weeks. The accuracy rate of simple past tense in each piece of writing was calculated following Pica’s (1983, as cited in Ellis & Barkhuizen, 2005, p. 80) target-like use analysis formula presented below:

$$\frac{n \text{ correct suppliance in contexts}}{n \text{ obligatory contexts} + n \text{ suppliance in non-obligatory contexts}} \times 100 = \text{per cent accuracy}$$

For instance, if there are 10 cases where simple past tense is necessary but a writer only uses simple past tense in only four cases, and he/she does not use simple past tense in non-obligatory contexts, the accuracy rate is 40. If the writer supplies two simple past tenses in non-obligatory cases (i.e., two overuse cases), in addition to four out of ten accurate supplies, the accuracy rate should be $4 \times 100 / (10 + 2) = 33.3$. By taking overuse into consideration, calculation following the formula can serve as a reliable measure of students’ usage of simple past tense.

The accuracy rate of each piece of writing piece was collected and entered into PCSW for data processing. Both descriptive statistics and inferential statistics were computed to address the two research questions. A series of ANOVA analyses were conducted and Pearson Correlation coefficient was computed.

RESULTS

The database consisted of 72 pieces of writings totaling 11,613 words, with 1,544 obligatory contexts of simple past tense and 1,100 correct suppliance of simple past tense in contexts. Table 2 presents the means of text length (number of words) and the means of obligatory contexts for simple past tense in each writing assignment over the three tests.

TABLE 2
Group Means of Length of Writing (Legt) and Obligatory Contexts of the Simple Past Tense (OC)

Correction Type	Pretest		Immediate Posttest				Delayed Posttest					
	Task 1	Task 2	Task 1	Task 2	Task 1	Task 2	Task 1	Task 2	Task 1	Task 2		
	Legt	OC	Legt	OC	Legt	OC	Legt	OC	Legt	OC	Legt	OC
Direct												
WCF (n=4)	1325	203	1645	215	1515	218	1245	170	1483	253	1395	163
Indirect												
WCF (n=4)	1420	198	2123	260	1643	190	2078	248	1635	273	1943	258
Control (n=4)	145.8	21.0	184.0	22.5	136.8	18.0	178.3	21.5	138.8	20.3	175.0	18.3

Table 3 presents the descriptive statistics of means and standard deviations of the accuracy rate score for the participants under three WCF conditions (direct WCF, indirect WCF, and no WCF) over the pretest, the immediate posttest, and the delayed posttest, categorized into Task 1 and Task 2. The pretest accuracy scores were analyzed by one-way ANOVA and generated no group difference (for Task 1, $F(2, 9) = .430, p = .663$; for Task 2, $F(2, 9) = .108, p = .899$), indicating that three groups are comparable at the beginning of the research period in either task. Paired T-test showed no difference between scores obtained in Task 1 and Task 2 in the pretest ($T = -.650, p = .529$), indicating that each group performed similarly across two tasks at the beginning of the research. Learner performance across three groups and across two tasks was similar prior to the treatment session.

TABLE 3
Descriptive Statistics of Task 1 and Task 2

Correction Type	Pretest		Immediate Posttest				Delayed Posttest					
	Task 1		Task 2		Task 1		Task 2		Task 1		Task 2	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Direct WCF (n=4)	75.4	17.8	69.0	20.9	89.1	5.3	84.3	18.4	87.6	5.9	73.6	16.1
Indirect WCF (n=4)	67.3	22.7	71.6	11.1	80.9	6.1	72.8	8.7	64.5	13.8	79.1	11.6
Control (n=4)	61.7	21.3	74.1	12.6	69.2	14.1	70.4	14.1	73.8	15.3	75.9	20.2

The intra-task effectiveness of different types of WCF was gauged first by examining student scores of Task 1 over time. Figure 1 presents group means of accuracy rate of the direct WCF group, the indirect WCF group, and the control group over three testing periods. As Figure 1 shows, the accuracy rate of two experimental groups peaked at the immediate posttest and deteriorated differentially in the delayed posttest. One-way ANOVA test found the group difference at the significance level of .05 in the immediate posttest, with $F(2, 9) = 4.552, p = .043$. The post hoc Turkey test indicated that the direct WCF group significantly outperformed the control group with $p = .036$. The difference between the indirect WCF group and the control group, although observable as Figure 1 illustrates, failed to reach any statistical significance. In the delayed posttest, the direct WCF group had a slight loss of accuracy, whereas the loss of the indirect WCF group was greater. Surprisingly, the control group improved slightly but consistently from the immediate posttest to the delayed posttest; however, one-way ANOVA revealed no significant difference among three groups in the delayed posttest.

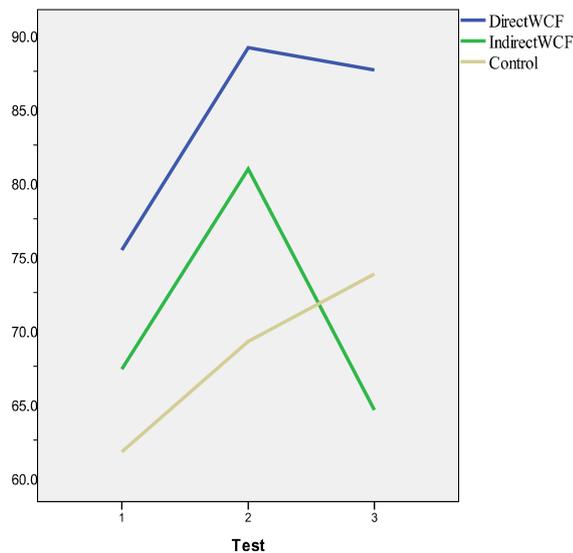


FIGURE 1
Group Means on Task 1

Excerpts drawn from participants' writing samples over the three testing periods help to illustrate the differential gains of the three groups over time. Example (3) is taken from the writing samples of a participant's (Student A) writings, who received direct WCF.

(3) Evidence of successful uptake and partial retention of direct WCF

a Task 1 pretest

*When I was a child, I **love** for art and design. I **draws** a lot [...] I **enjoy** that.*

b Task 1 immediate posttest

*When I was a child, I **loved** for art and design. When I had time, just **drew**. [...] I **was pleased to did** that.*

c Task 1 delayed posttest

*When I was a child, I **love** drawing very much. [...] I **was enjoyed** it.*

Student A from the direct WCF group improved her use of simple past tense from the pretest to the immediate posttest, as evidenced by her correct use of *loved*, *drew*, and *was pleased*. However, there is an overuse of *did*. In the delayed posttest, unfortunately, the base form of *love* recurred. Interestingly, she wrote *was enjoyed* instead of *enjoy*, which was used in the pretest. It probably indicates that, despite a lack of actual control over the tense forms, the student's awareness of the use of simple past tense in narratives had very likely increased.

(4) Evidence of partial uptake and steady deterioration of indirect WCF

a Task 1 pretest

*Fi[n]ally, I **became** a printing designer, I **feeling** very happy very day.*

b Task 1 immediate posttest

*Fi[n]ally, I **got** a good job, I **am** so happy.*

c Task 1 delayed posttest

*Finally, I **have** a good job, I'm so happy.*

Example (4) presents sentences written by Student B from the indirect WCF group over time. She replaced the present participle *feeling* with the copula *be* in the present tense form, and adhered to the same form *am* in the delayed posttest. The unsuccessful uptake of indirect WCF probably indicates her failure to understand why the original error was incorrect, and/or how to correct it. Even worse, both verbs were in incorrect tense forms in the delayed posttest, an indication that her awareness of using simple past tense in narratives may have failed to improve in the way that as Student A's did in Example (3).

(5) Evidence of persistent errors without modification in the control group

a Task 1 pretest

*I always **talking** about the picture which me **draw** with my Dad and Mom.
They always **sit** and **listening** to me when I **talk**.*

b Task 1 immediate posttest

*I alway[s] **talking** about my picture to my Dad and Mom. My Dad and Mom alway[s] **listening** for me and I **am** so pleased.*

c Task 1 delayed posttest

*Unfinish my painting, I alway[s] **talkin**g about what I **draw**s with My Dad and M[o]m. They alway[s] **sit** draw and **listenin**g for me.*

Example (5) shows that Student C from the control group repeated similar errors over time, including misusing present participles and base forms as simple past tense forms.

The inter-task effectiveness of direct and indirect WCF needs to be gauged by examining learner performance in Task 2. Figure 2 illustrates learners' use of simple past tense over three testing periods in Task 2. From the pretest to the immediate posttest, the direct WCF group's accuracy rate considerably increased, whereas the indirect WCF group showed no improvement, and the control group had a decrease of accuracy. And in the delayed posttest, the direct WCF group lost its edge over the other two groups as both the indirect WC group and the control group demonstrated slight gains in accuracy. Nevertheless, one-way ANOVA did not reveal any significant difference between groups in either the immediate posttest or the delayed posttest.

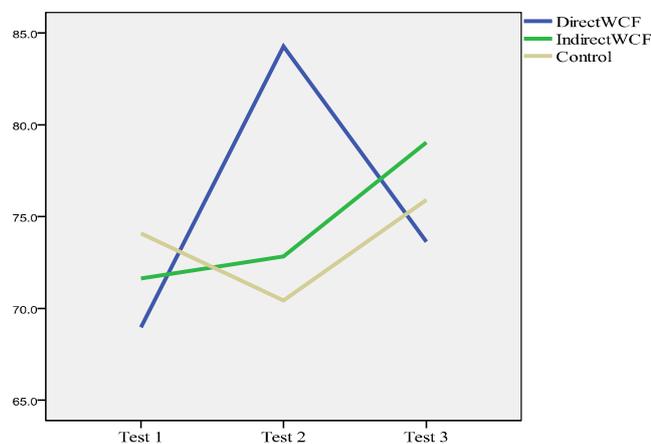


FIGURE 2
Group Means on Task 2

(6) Evidence of partial uptake and retention of direct WCF

a Task 2 pretest

*When I be[**g**]an to draw seriously, I'm a senior high school student. I **love** writing very much, I **want** to be a writer.*

b Task 2 immediate posttest

*I learned drawing from two years ago. Before I joined the art class, I **was** a student as the other classmate. At the first, I **love** writing more than drawing. I even **wanted** to be a writer.*

c Task 2 delayed posttest

*I began to **drew** until two years ago. Before it, I **like** writing more than **drew**, but two years ago, it **change**.*

Taken from Student A's writing samples of Task 2, Example (6) allows us a closer scrutiny of learners' uptake and retention over time across two writing tasks. The pretest saw Student A initially use simple past tense yet quickly return to simple present tense. In the immediate posttest, Student A almost consistently used simple past tense, except for one incorrect token of *love* rather than *loved*. However, because of the incorrect use of simple past tense gerunds; and infinitives, her delayed posttest writing is even less accurate than her pretest writing.

(7) Evidence of partial uptake and retention of indirect WCF

a Task 2 pretest

*Once when I was painting, my teacher came to praise me, he said that my painting **make** him very happy. At there, I **get** up early every morning and I **sleep** late everyday.*

b Task 2 immediate posttest

*Once when I was paint, my teacher said that my paintings **made** him very happy. At there, I **got** up early every morning and **sleeping** late every night.*

c Task 2 delayed posttest

*Once when I was painting, my teacher came to praise me. He said that my paintings **made** him very happy. [...] At there, I **get** up early every morning and **sleep** very late every night.*

Example (7) presents sentences written by Student B from the indirect WCF group over time. Despite having misused the base form of make, get, and sleep in the pretest, she correctly used the first two verbs in the immediate posttest. In the delayed posttest, she retained the correct past tense form of make, but repeated the same erroneous forms of get and sleep. Given that Student B failed to effectively conduct or retain uptake of indirect WCF in Task 1, her improvement in Task 2 is quite surprising, though consistent with the unexpectedly increasing accuracy of the indirect WCF group in Task 2 as time functions.

To further examine whether learners' gains or losses in Task 1 can be transferred to Task 2 where WCF was absent, the researcher also computed the correlation between students' performance in Task 1 and in Task 2. Table 4 reports the Pearson Correlation coefficient between group means of Task 1 and group means of Task 2.

TABLE 4
Pearson Correlation Coefficient between Task1 and Task 2

	Direct WCF Group	Indirect Group	WCF Control Group
Correlation btw. Task 1 and Task 2	.889**	.527	.550*

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 4 indicates that the performance of the direct WCF group in Task 1 and Task 2 significantly co-vary at the .01 level. The indirect WCF group performed differently in Task 1 and Task 2, with the correlation coefficient even lower than that of the control group, which is significant at the level of .05.

In sum, results of Task 1 indicate that only the direct WCF group significantly outperformed the control group in the short term and moderately retained its gains over a longer term. The results of Task 2 revealed some trends, showing that the direct WCF group performed better in the short term, whereas the indirect group had a potential advantage as time functions; however, these findings lacked statistical significance. The correlation coefficient suggests that the direct WCF group performed the most consistently in the two tasks, while the indirect WCF group performed differently across tasks.

DISCUSSION

The current study addresses two research questions: (a) whether direct and indirect WCF function differently in facilitating learners' use of simple past tense in an original text, where WCF was provided, and (b) whether the two WCF techniques have different effects on learner performance in a new text, where WCF was not provided.

Considering the first research question, the researcher examined the change of learners' use of simple past tense in Task 1 where WCF was provided, over the course of three tests. The results indicate that direct WCF is effective in enhancing and retaining greater accurate use of simple past tense in a local text, whereas indirect WCF leads to only marginal, short-lived improvement. The effectiveness of direct WCF found in the present study is consistent with previous findings that direct WCF can improve writing accuracy with the same text within a short period (Ashwell, 2000; Fathman & Walley, 1990; Ferris, 1999; 2004; 2006; Ferris & Roberts, 2001).

The intra-task effectiveness of indirect WCF compared to that of direct WCF is weaker and less sustainable. On the one hand, the moderate immediate gains triggered by indirect WCF corresponds to Truscott and Hsu's (2008) claim that learners are able to correct the erroneous forms treated by indirect WCF in the same text. On the other hand, the indirect WCF group's long-term regression in Task 1 contradicts with previous findings in support of the long-term benefits of indirect WCF for enhancing the accuracy rate of the same text (Ashwell, 2000; Ferris & Roberts, 2001; Ferris, 2006). Two reasons may account for the unexpected results. First, the short duration of the present study with a single treatment may be insufficient to either stimulate long-term progress or probe the long-term effect if it occurs. Second, the current research did not involve self-editing or self-revision, whereas Ferris and Roberts (2001) and Ferris (2006) had students revise initial drafts with WCF provided. Given that revision has been considered a "helpful and perhaps necessary intermediate step between expert feedback about a target feature and long-term acquisition of that feature" (Ferris, 2010, p. 189), we should be aware that the absence of self-revision might have hindered acquisition as it does

not allow students to have additional time to process WCF and to revise errors. Hence, if conducted over a longer research term and allocating students more time and opportunities for self-editing, the effect of indirect WCF might be more evident. Nevertheless, the current findings are sufficient to suggest that indirect WCF provided for only one time and without mandatory self-editing was not as effective as direct WCF over the short-term.

The second research question can be addressed by examining learner performance of Task 2 under different WCF conditions and comparing learner performance across tasks. The direct WCF group performed in a pattern similar to that performed in Task 1 with observable progress in the immediate posttest; however, it was followed by a sharper regression in the delayed posttest. On the other hand, the indirect WCF group performed very differently in Task 2 as compared to in Task 1. While the immediate gain in Task 2 is marginal at best compared to that in Task 1, the gain actually grew, rather than disappearing, in the delayed posttest of Task 2. Although no group difference is found in two posttests of Task 2, such different patterns of performance in two tasks between the direct WCF group and the indirect WCF group is aligned with Ferris' (2006) findings in her observatory study that direct WCF, treating mainly sentence structure errors, failed to trigger longitudinal learning, whereas indirect WCF, mainly treating errors of verb tense and verb forms, significantly reduced learners' errors over time in spite of a lower immediate uptake rate. The greater inter-task effectiveness of indirect WCF can be accounted for by deeper learner engagement, especially in terms of retrieving L2 knowledge and testing L2 hypotheses, since learners receiving indirect WCF need to generate the target form independently (Ellis et al., 2008). Processing, retrieving, and hypothesis testing demand more time and resources than incorporating teachers' direct WCF. Therefore, a longer interval between treatment and the delayed posttest of Task 2 might be able to better engage learners in processing indirect WCF, leading to later increased accuracy. It is also worth mentioning that the consistent gains should not be attributed to practice effect as the indirect WCF group failed to sustain its gains in Task 1, which was also repeated three times in the study.

While addressing the research questions, data collected in the current study

further confirms the complex, non-linear route of SLA and the limited effectiveness of a single dose of WCF treatment (Storch, 2010). As Examples (6) (7) illustrated earlier, although learners had modified most, but not all, of their errors in the immediate posttest, they failed to sustain the gains, indicated by the equally poor, or even lower, accuracy in the delayed posttest when compared to the pretest. Discouraging as the data may seem, a comparison of the erroneous forms participants used over time actually reveals that the interlanguage restructuring might have been triggered with the help of WCF. In Example (6c), Student A overused simple past tense as infinitives and gerunds (*I began to **drew**; I like writing more than **drew***), making her delayed posttest writing even less accurate than her pretest writing. This effectively illustrates Lightbown's (1985, as cited in Gass & Selinker, 2008) rationale of restructuring as a fundamental component of SLA:

[Restructuring] occurs because language is a complex hierarchical system whose components interact in nonlinear ways. [...] An increase in error rate in one area may reflect on increase in complexity or accuracy in another, followed by overgeneralization of a newly acquired structure[.] (p. 177, as cited in Gass & Selinker, 2008, p. 235)

Incorporating new information and subsequent reorganization of the existing system is a longitudinal process. However, the current study only provided WCF at a single treatment session and examined the effectiveness of WCF in two posttests at an interval of two weeks. Even if the restructuring is triggered by WCF, given both the brief time span and the limited dose of WCF, it is not clear whether the restructuring continues over the long term. Therefore, as Storch (2010) suggested in a critical review of WCF research, restricted WCF treatments, effective as they are in experimental studies, may be insufficient in authentic classrooms where multiple, constant, and consistent WCF is required.

The differential effectiveness of direct and indirect WCF discovered in the current study should also be carefully discussed in relation to learner variables. According to Ellis' (2010) componential framework of corrective feedback research, learner engagement in WCF and the learning outcomes are mediated by two sets of factors: individual difference factors and contextual factors. The current participants,

EFL learners at college level with beginner proficiency, are distinct from participants of other investigations who are mostly adult intermediate ESL learners. Lower level learners may fail to benefit as much as higher level learners, as their limited L2 knowledge may prevent them from producing the target form hinted by indirect WCF (e.g., Ferris & Hedgcock, 2004). Furthermore, Ferris (2006) has cautioned us that her findings favoring indirect WCF in treating rule-governed structures were generated from “highly motivated learners in an academic context at relatively high levels of L2 proficiency” (p. 98). Learner proficiency is also acknowledged in Evans, Hartshorn, and Strong-Krause’s (2010) framework of modulating variables of WCF as one of the most powerful learner variables but one over which teachers have the least control. Thus, it is likely that the inter- and intra-task effectiveness of direct and indirect WCF found in the current study is considerably associated with participants’ limited English proficiency. It is therefore necessary and enlightening to conduct future studies exploring the role of learner proficiency in mediating the effectiveness of direct and indirect WCF.

CONCLUSION

In response to Truscott (1996), researchers have conducted empirical studies and found growing evidence for the effectiveness of WCF not only in improving a local text, but also in facilitating L2 development. However, researchers have not reached a consensus on the effectiveness of WCF in relation to WCF types, and the scope of linguistics structures amenable to WCF remains to be determined. The current study adds to the research base by verifying that WCF intensively targeting a specific rule-based language structure can lead to short-term improvement, although the impact on long-term learning still requires further investigations. However, a more meaningful contribution of this study is to examine and compare learner acquisition of simple past tense in a local text versus in a new writing text where WCF was not initially provided. The results show that direct WCF is more effective compared with indirect WCF when learners are engaged in the same task, yet indirect WCF has a greater potential to invoke long-term learning across tasks.

Nonetheless, this study has some limitations. First, the small sample size is highly likely to render the current findings of limited value when a larger learner population is considered. The involvement of more participants would have made the results more persuasive and robust. Another limitation is that the highly-controlled experimental design--featuring a single treatment, a specific target structure, limited time and restricted opportunities for learners to process and respond to WCF--fails to maintain ecological validity, so that similar findings may not be found in authentic L2 classrooms. In addition, since simple past tense was one of the target structures of the syllabus, the improvement of learners may be attributed to the joint effect of instruction and WCF, rather than WCF alone.

The present findings are expected to prompt future WCF research in the areas of how learners transfer their gains triggered by WCF from one writing text to texts of different genres; how direct and indirect WCF can differentially facilitate the acquisition of various language structures; and how learner proficiency interacts with the differential effectiveness of direct and indirect WCF. The fact that effectiveness of WCF is not definite but considerably modulated by various factors, including the type of WCF, individual factors, and pedagogical contexts, also reminds L2 teachers to carefully consider of learners' needs, the nature of writing tasks, and teaching objectives when implementing WCF in L2 classrooms.

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APPENDIX A

The Story of a Graphic Designer

I chose to work in art and design very early. I am so pleased to have a job that I love so much. I can't imagine doing anything else.

When I was a child, I could sit quietly and happily at a table and paint for hours. My brother and sister were bored after an hour. But I was not. On weekends, I spent my time explaining to my family what I drew.

My love for art really developed when I went to middle school. Each week, our art teacher gave us a topic to let us draw something about it. I was very happy to spend a whole Sunday drawing and then showed my work to my teacher and class. I enjoyed the time when they were surprised at my drawing skills. I went to college to study Media Studies. I learned Dreamweaver, Photoshop, and Illustrator. After traveling around the world, I got my first job as a graphic designer for a door factory. I created e-mail newsletters and product microsites

as well as working on literature and branding. After that, I became a freelance designer. I wanted to design what I was designing and who I was designing for. It was hard, but I managed to survive. For several years, I couldn't be happier. I love my job and wake up every morning filled with expectations and excitement. I realize that I am very lucky indeed. That is how I became a graphic designer.

APPENDIX B The Picture Prompt of Task 1

