

# **The Effectiveness of Correction Codes on L2 Writing Accuracy**

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## **Abstract**

The use of a metalinguistic correction code is a common written corrective feedback (WCF) strategy for providing feedback to L2 learners and is a suggested method in various pedagogical teacher guidebooks. This paper summarises and analyses the results of 14 studies which included the use of a correction code when investigating the effectiveness of different WCF strategies on L2 writing accuracy. Overall findings suggest that correction codes have a greater positive effect on long-term writing accuracy than direct WCF and can also promote additional reflection and higher level thinking for learners, yet they are most effective when providing feedback on errors which reflect language rules that students have previously learnt.

## **Corrective Feedback Strategies**

Corrective feedback (CF) is defined by Ellis and Shintani (2014) as “a type of feedback that provides learners with negative evidence” (p. 336). In other words, it indicates when learners have made some kind of error. In written corrective feedback (WCF), it is intended that learners will use this feedback to revise and correct the original text containing the error. There are a variety of ways that this feedback can be provided, which are usually distinguished as direct and indirect WCF strategies.

Direct CF is a form of explicit feedback in which the teacher “provides the student with the correct form” (Ellis, 2009, p. 98), for example by writing the correction above the error in the text. In contrast, indirect CF is a type of implicit feedback in which the teacher “indicates that an error exists but does not provide the correction” (Ellis, 2009, p. 98). It requires students to self-correct their errors and revise their writing themselves. The teacher can underline errors, show where missing words are, or make notes in the margin of a sentence to show that an error exists.

## **The Use of Correction Codes**

One of the ways indirect WCF can be given is by the use of a correction code, also known as an error code, in which the teacher “provides some kind of metalinguistic clue as to the nature of the error” (Ellis, 2009, p. 98). Using abbreviated codes that represent different kinds of errors, the teacher can write these codes above or below errors in the text or in the margin of a sentence to indicate the presence of errors. Ellis (2009) distinguishes this option as ‘metalinguistic feedback’, although in various second language acquisition (SLA) and second language (L2) writing studies it is often described as a form of indirect WCF. A distinction can be made, however, between indirect feedback without codes (indirect uncoded WCF) and indirect feedback using a metalinguistic

correction code (indirect coded WCF).

Using a correction code to indicate the presence of errors is a common method among teachers for providing feedback on written work, particularly for university-level students, and is proposed in several pedagogical teacher guidebooks. Johnson (2008) suggests that a correction code is a convenient way to show learners where they have made an error. Harmer (2013) believes this aids students in the learning process as they can use the feedback given to help identify and correct their mistakes by themselves, while Hedge (2000) states that encouraging learners to self-correct makes language learning more memorable, particularly when learners consult reference books to correct their errors. In addition, requiring learners to take responsibility for their errors, such as by giving feedback with a correction code, is argued to be effective for long-term learning and progress in writing accuracy (Ferris, 2002). Ferris and Hedgcock (2005) note that indicating error types using a code may elicit previously learned language rules from learners, especially those who have received formal grammar instruction, which they can then apply to their self-correction.

WCF has been a controversial topic in L2 studies with research often producing conflicting findings regarding the advantages and corrective effectiveness of different strategies (Ferris, 2012). Table 1 summarises the findings of 14 studies in chronological order which included the use of indirect feedback through a metalinguistic correction code (indirect coded CF) in comparison with other WCF strategies, and the effects of these strategies on L2 writing accuracy.

Table 1. Summary of studies (including the use of correction codes) on the effects of WCF strategies on L2 writing accuracy

<b>Study</b>	<b>Primary Focus</b>	<b>Context</b>	<b>CF Types</b>	<b>Main Findings</b>
Lalande (1982)	Effect of WCF techniques on accuracy of written compositions.	60 intermediate U.S. college learners of German	<b>Indirect coded CF</b> Direct CF	Indirect coded CF helped students reduce errors over time more than direct CF.
Robb et al. (1986)	Effect of different error feedback treatments on students' writing.	134 Japanese EFL college freshmen	Direct CF <b>Indirect coded CF</b> Indirect uncoded CF	All students improved written accuracy over time regardless of feedback method.
Ferris & Roberts (2001)	Effect of different error feedback strategies on students' ability to self-edit writing.	72 high-intermediate ESL students in a U.S. college	<b>Indirect coded CF</b> Indirect uncoded CF No CF	No significant differences based on CF type. Less explicit CF (underlining errors) may be adequate for students' ability to self-correct.
Ferris (2006)	Short-term and long-term effect of different error correction strategies on writing accuracy.	92 intermediate to advanced ESL students in a U.S. college	Direct CF <b>Indirect coded CF</b> Indirect uncoded CF	Indirect CF may be superior to direct CF for facilitating writing improvement over time. Indication of error adequate to help students revise writing.
Erel & Bulut (2007)	Effect of direct and indirect coded error feedback on writing accuracy.	37 pre-intermediate Turkish EFL college students	Direct CF <b>Indirect coded CF</b>	Indirect coded CF more effective in improving writing accuracy, although no statistically significant differences.
Ferdouse (2012)	Effectiveness of using correction symbols to give CF on writing.	20 Bangladesh EFL college students	<b>Indirect coded CF</b> Indirect uncoded CF	Indirect coded CF more effective than indirect uncoded CF for students' self-correction.

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Sampson (2012)	Effect of uncoded and coded WCF on error frequencies in writing.	10 Columbian EFL college students	Direct CF <b>Indirect coded CF</b>	Indirect coded CF more effective at helping learners recognise and self-correct errors and produce correct forms.
Van Beuningen et al. (2012)	Effect of direct and indirect WCF on writing accuracy.	268 multilingual learners of Dutch in Dutch secondary schools	Direct CF <b>Indirect coded CF</b> No CF	Direct CF more effective for improving grammatical accuracy. Indirect CF more effective for improving non-grammatical accuracy.
Ahmadi-Azad (2014)	Effect of coded and direct feedback on writing accuracy.	27 pre-intermediate Iranian EFL learners	<b>Indirect coded CF</b> Indirect uncoded CF	Indirect coded CF had a greater positive effect on both short-term and long-term writing accuracy.
Tootkaboni & Khatib (2014)	Effect of different WCF strategies on short-term and long term writing accuracy.	67 EFL high school students in Iran	Direct CF + T/S individual conference <b>Indirect coded CF</b> No CF	Direct CF significantly superior for improving short-term writing accuracy. Indirect coded CF better for improving long-term writing accuracy but not statistically significant.
Ji (2015)	Effect of two types of indirect error correction on treatable writing errors.	Chinese EFL college students	Indirect uncoded CF <b>Indirect coded CF</b>	Both types effective, but coded CF more effective for maintaining significant improvement in language accuracy.
Gould (2017)	Effect of different WCF strategies on different types of errors.	81 Japanese EFL college students	<b>Indirect coded CF</b> Indirect uncoded CF Direct CF	Indirect coded CF most effective in dealing with sentence-level errors.

Tan & Manochphinyo (2017)	Effect of direct and indirect WCF on grammatical errors.	120 Thai EFL college students	Direct CF <b>Indirect coded CF</b>	Students who received coded CF showed significant improvement in reducing some kinds of grammatical errors in the delayed post-test.
Ogawa (2018)	Effect of unfocused indirect coded CF and focused metalinguistic explanation on writing accuracy.	61 Japanese EFL college students	<b>Indirect coded CF</b> <b>Indirect coded CF</b> + Metalinguistic explanation	A combination of error-code CF and metalinguistic explanation had a positive effect on students' learning of grammatical forms.

*Note.* CF = Corrective feedback, WCF = Written Corrective Feedback, T/S = Teacher/student

## Discussion

The findings of studies comparing coded feedback with direct feedback have generally supported the use of correction codes as a WCF strategy that improves long-term L2 writing accuracy. Sampson (2010) reported that indirect coded feedback was more effective than direct feedback at helping learners recognise and correct errors and then produce the correct forms in subsequent writing. He theorised that this is “possibly as a result of the increased cognitive engagement and social interaction” that correction codes afford (p. 501). Learners who received coded feedback reduced their frequency of errors by 57% compared to 34% for learners who received direct feedback over a four-week period. Tan and Manochphinyo (2017) found that coded WCF led to a significantly lower mean number of errors for some error types in a 1-month delayed posttest. Several other studies have also shown a greater reduction in errors made by learners who received indirect coded feedback (Erel & Bulut, 2007; Lalande, 1982; Tootkaboni & Khatib, 2014). In Lalande’s (1982) study, the results of immediate and

delayed posttests were additionally found to be statistically significant. While direct WCF may be superior for correctly revising errors in the short term (Gould, 2017; Tootkaboni & Khatib, 2014), the long-term effects from the use of a correction code on writing accuracy appear to be superior.

Studies comparing coded and uncoded indirect WCF have found the use of a correction code to potentially have greater benefits. Ahmadi-Azad (2014) observed that “coded error feedback had a great impact in error reduction” (p. 1005) with students who received coded feedback scoring significantly higher on posttests for both immediate and delayed writing accuracy, while there were no significant differences for learners who received uncoded feedback. Ji (2017) reported that coded error correction had better delayed effects for improved language accuracy, while Ferdouse (2012) found that learners who received coded feedback were more successful in correcting errors across three drafts of an essay.

Although coded feedback could be more beneficial, it has been suggested that uncoded indirect WCF may be adequate in helping students self-correct and revise their writing. Ferris and Roberts (2001) discovered “no statistically significant differences in editing success ratios” between students who received coded feedback and those who had their errors underlined (p. 172). In a longitudinal study across a semester, Ferris (2006) found that students could utilise feedback successfully and improve their writing regardless of WCF type, with learners who received uncoded feedback nearly as successful at self-correcting their errors (75%) as those who received coded feedback (77%). It was hypothesised that learners used the feedback as a sign of an error and made corrections using their own acquired language knowledge, rather than utilising the correction code itself (Ferris & Roberts, 2001).

Despite this suggestion that less explicit feedback may be sufficient, Ferris and

Roberts (2001) argue that “this strategy may not give adequate input to produce the reflection and cognitive engagement that helps students to acquire linguistic structures and reduce errors over time” (p. 177). They proposed that combining coded indirect feedback with lessons focusing on specific errors may lead to learners’ increased improvement being long lasting. This theory was supported in a recent study by Ogawa (2018), in which unfocused coded feedback alone was ineffective in improving students’ accuracy. Only with the addition of focused metalinguistic WCF were students able to show greater long-term accuracy on several grammatical forms.

When examining the effectiveness of different WCF strategies for individual error types, the usefulness of a correction code appears to be dependent on whether the errors are ‘treatable’ or ‘untreatable’. Ferris and Roberts (2001) noted that learners who received coded feedback were more successful in correcting ‘treatable’ errors, typically grammatical forms that reflect learned language rules, than ‘untreatable’ errors, such as word choice and sentence structure that are acquired over time and differ frequently in writing. They concluded that untreatable errors are more difficult to treat with less explicit methods of WCF. Similar findings were reported by Sampson (2012) and Gould (2017), with the latter study also finding that underlining errors was the least successful method in bringing about correction for certain ‘treatable’ errors such as verb tense and subject-verb agreement.

It should also be noted that findings on the effectiveness of coded feedback compared to other strategies have not always been in agreement. Robb, Ross, and Shortreed (1986) reported no significant differences in writing accuracy over an academic year regardless of feedback type, while Van Beuningen, De Jong, and Kuiken (2012) concluded that learners only improved their long-term grammatical accuracy when receiving direct feedback. However, in the latter study, the setting, participants



and their L2 were significantly different which may have contributed to differences in the results.

## **Conclusion**

Due to the diverse range of WCF studies with different methodologies, focuses, variables, duration of treatments, and sometimes conflicting findings, it is difficult to come to any definite conclusions on the effects of a correction code on L2 writing accuracy compared to other WCF strategies. However, the previous research in this field summarised in the discussion above suggests that the following three conclusions can tentatively be reached.

Firstly, providing indirect WCF using a correction code appears to have greater positive long-term effects on L2 writing accuracy compared to direct WCF. This could be attributed to the code being a means to help students notice and pay attention to the particular kinds of errors they make.

Secondly, implicit indirect WCF through indicating the presence and location of errors may be sufficient to improve L2 writing accuracy, and therefore using a correction code may be unnecessary for this purpose. However, providing coded feedback may have additional benefits, such as promoting additional reflection and higher-level thinking, which can further help learners successfully improve their long-term L2 writing accuracy.

Finally, a combination of coded feedback on ‘treatable’ errors and direct feedback on ‘untreatable’ errors may have the greatest effect for improving L2 writing accuracy. ‘Treatable errors’ generally reflect language rules taught in the L2 classroom which students may already have an awareness of and can be assumed to be more easily correctable. In contrast, ‘untreatable errors’ differ frequently in writing and hence

students may not always know how to make corrections without explicit feedback.

Based on the above findings, further longitudinal research should be made in comparing the effectiveness of different WCF strategies on students' L2 writing accuracy development over time. A major limitation of the majority of studies in this field is the treatment duration, typically ranging over a month or a single school semester, in which it is unrealistic to expect significant growth in learners' writing ability. Additional research on the effectiveness of correction codes for reducing different kinds of errors in the long-term is also warranted and could provide findings that are more meaningful for teachers of L2 writing in choosing the most effective types of WCF.

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