# Effect of direct and indirect corrective feedback on Iranian EFL writers' short and long term retention of subject-verb agreement

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# Effect of direct and indirect corrective feedback on Iranian EFL writers' short and long term retention of subject-verb agreement

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**Abstract:** Investigations have been too limited and inconclusive to find out whether written corrective feedback improves grammatical accuracy of learners. This study aimed at investigating the comparative effects of direct and indirect corrective feedback on short-term and long-term retention of the subject-verb agreement by Iranian EFL writers. The design of the study was a two group pre-post-test quasi-experimental one. The Participants were 45 male and female learners at the age range of 14 to 16. Their L1 was Turkmen and they were all taking an elementary course at a language school in Gonbad Kavoos, Iran. The participants were assigned to two experimental groups i.e. direct and indirect feedback groups, and one control group. To collect data, a pretest, post-test and a delayed post-test were given to all the groups. One-way Analysis of Variance (ANOVA) was run to test the research hypotheses. The results showed that the types of corrective feedback did not have a significant positive effect on the participants' short-term and long-term retention of subject-verb agreement. Besides, Scheffe post hoc test showed that there was

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## PUBLIC INTEREST STATEMENT

This research aimed at testing the comparative effects of direct and indirect corrective feedback on the short and long- term retention of the grammatical feature of subject-verb agreement by Iranian EFL learners. There were two experimental groups and one control group. The experimental groups were given direct and indirect corrective feedback. However, the control group did not receive any corrective feedback. The researchers hypothesized that the direct and indirect corrective feedback do not have any significant effect on the participants' short and long-term retention of subject-verb agreement. The findings showed that corrective feedback did not have a significant positive effect on the participants' short and long-term retention of subject-verb agreement. Moreover, it was shown that there was a significant decline in grammatical accuracy of the indirect feedback group in the delayed posttest.

a significant decline in grammatical accuracy of the indirect feedback group in the delayed posttest. The results have some implications for teaching writing in the EFL context.

**Subjects: Language & Linguistics; Language Teaching & Learning; General Language Reference**

**Keywords: Direct corrective feedback; indirect corrective feedback; subject-verb agreement; written corrective feedback**

## 1. Introduction

One of the key issues in L2 writing instruction in the last few decades has been the efficacy of corrective feedback. The research on corrective feedback has centered on the types of corrective feedback, and the role of individual differences in this effect (Yoshida, 2008). Corrective feedback plays a crucial role in developing L2 acquisition theories as well as in teaching second languages. Researchers have contended that the role of corrective feedback in L2 acquisition will determine the relative importance of positive input or negative input in L2 acquisition, which will provide a framework for selecting teaching methods and materials, the role of teachers and language learners, and providing the types of appropriate input in class (Van Beuningen, 2010).

There has been a debate on whether corrective feedback is of any help to the language learner. Truscott (2007) believes that it is not only ineffective but also potentially harmful. On the other hand, other researchers (e.g., Bitchener & Knoch, 2008; Karim & Nassaji, 2020; Roshan, 2017; Tayebipour, 2019) have found that corrective feedback is valuable in boosting grammatical accuracy.

There has also been a debate on which type of corrective feedback is the most helpful. Promoters of direct corrective feedback (e.g., Ellis, 2009) contend that direct corrective feedback enables language learners to immediately internalize the appropriate form as given by their instructor. Language learners whose mistakes are not corrected directly do not know whether their own estimated rectifications are accurate. Bitchener and Knoch (2010) propose that exclusive direct corrective feedback offers language learners the sort of explicit data that is required for testing hypotheses. The alternative to the direct corrective feedback is the indirect corrective feedback. Indirect correction techniques can take various forms with various degrees of explicitness (e.g., underlining, coding, etc.) (See Bitchener & Knoch, 2008). Ferris (2002) contends that indirect input is by and large more proper and powerful than direct feedback. Ferris and Roberts (2001) argue that the indirect feedback promotes reflection about linguistic structures, resulting in long-term retention.

## 2. Literature review

Over the past three decades, there have been profound differences of ideas over the role of error correction in language teaching. On the one hand, some theorists emphasized the importance of corrective feedback as negative evidence (S. Gass, 1997; Long, 1996). On the other hand, some viewed it as a waste of time (Krashen, 1989). Some even considered it to be harmful (Truscott, 1996, 1999). Truscott's claims have been discussed by scholars such as Bruton (2009), Chandler (2004, 2009), and Ferris (2002), D. R. Ferris (2004). This section reviews some of the outstanding issues in this regard.

### 2.1. Theoretical background

Corrective feedback is very important in some learning theories (Kim, 2012), including Schmidt's (1990) noticing hypothesis. Schmidt highlights the important function of grammar and attention to improve the language learning process. He discusses that learners' awareness of the differences between their interlanguage and their target language i.e., "noticing" is "necessary and enough for converting input

to intake" (p. 129). Schmidt (2001) claimed that for language acquisition to happen, the form of language must be focused on. Accordingly, error correction, grammar correction or written corrective feedback are necessary to draw learners' attention to language form (Ji, 2015). In addition, S. M. Gass (1991) argues that without direct or frequent corrective feedback in the entry, which would allow learners to detect differences between the target language and their learner's language, fossilization could occur. Gass and Selinker (2008) emphasize that the awareness of insufficiency serves to trigger a modification of existing knowledge in L2, the results of which could appear later.

### 2.2. Corrective feedback and L2 writing

Before 1996, many educators, teachers, and researchers came to the agreement that corrective feedback assists learners to develop their writing accuracy (Sameera et al., 2016). However, in 1996, when Truscott published an article about the inefficacy of the corrective feedback, everything changed. He asserted that corrective feedback causes learners to feel stressed when they are informed of their errors discouraging them from writing or considering writing as an interesting learning activity. To support this idea, Truscott mentioned that many studies (e.g., Hendrickson, 1980; Kepner, 1991; Robb, et al., 1986) reported error correction as an ineffective and useless activity. Moreover, he cited Sheppard's (1992) research to support the claim that corrective feedback can be harmful as it can affect fluency. Based on these findings, Truscott concluded that corrective feedback should be abandoned.

One of the critics of Truscott's claim was D. R. Ferris (2004), who expressed that Truscott had not considered positive evidence of corrective feedback. Moreover, he expressed that more studies were needed to find a conclusive answer. Hyland and Hyland (2006) concluded that feedback can assist learners to have more control on their writing skill. Moreover, Sheen et al. (2009) stated that corrective feedback causes learners to pay more attention to their errors and improve the accuracy of their writing. Likewise, Brookhart (2008) stated that without corrective feedback, language learners do not have enough motivation, and cannot understand which elements of their writing require development and improvement. Moreover, Lee (2008) argued that learners might have inaccurate understanding about their writing performance without having feedback.

### 2.3. Direct VS. Indirect corrective feedback

Corrective feedback has been divided into direct and indirect types in the literature. Direct feedback assists language learners to correct their errors via provision of the correct linguistic form (Ferris, 2006). In this type of feedback, input is provided with the correct forms of student errors in two forms of oral or written (Bitchener et al., 2005). Direct feedback has various forms. For example, it might be done by highlighting an incorrect word, introducing a missing word, morpheme or phrase, and providing the correct linguistic form usually above the wrong form or in the margin (Ferris, 2006).

Indirect feedback just indicates that an error exists (Ferris & Roberts, 2001). In other words, teachers only make learners aware of their errors, but they do not provide any correction for their students (Ferris & Roberts, 2001; Lee, 2008). For example, teachers can provide general clues about the type and location of an error by utilizing a line, a circle, a mark, a code or a highlight (O'Sullivan & Chambers, 2006), or by putting a line in the margin next to the line including the error (Talatifard, 2016). Elashri (2013) mentions that two sub-types of indirect feedback are coded and non-coded indirect feedback. For the coded indirect feedback, the teacher highlights the error and writes the sign above that error, and then he/she gives the writing back to the learner to correct it. In the non-coded indirect feedback, the teacher highlights the error without writing any symbols and the learner must think about the error to find and correct it. Indirect feedback challenges learners to correct the error according to their knowledge. Thus, it can encourage students' participation and attention to forms through developing their problem-solving skills in the hope of fostering long-term retention.

On the other hand, direct corrective feedback is effective for specific kinds of errors (Sheen et al., 2009). It is effective on structural and lexical errors (Ashwell, 2000).

### 2.4. Empirical studies on the effect of direct and indirect corrective feedback on retention of writing accuracy

Skehan ([1996](#)) defined accuracy as "how well the target language is produced in relation to its rules" (p. 23). Simply put, it is defined by Foster and Skehan ([1996](#)) as the freedom of the written work from error. Wolfe-Quintero et al. ([1998](#)) defined writing accuracy as being error-free while applying the language in written communication. Many researchers have investigated whether direct or indirect corrective feedback affect the written accuracy.

Some of them found the positive effect of indirect corrective feedback on written accuracy. For instance, Erel and Bulut ([2007](#)) did a comparative study of the role of direct and indirect coded feedback in writing accuracy of Turkish EFL learners. The participants were in the pre-intermediate level. There were 21 students in Indirect Coded Feedback Group and 16 students in Direct Feedback Group. They had enrolled in two EFL writing classes and their weekly writings were checked. The Findings indicated that the number of errors of participants in indirect coded feedback group gradually decreased during the course of the study. Similarly, Tang and Liu ([2018](#)) found that among 56 participants who received direct and indirect feedback modes and completed three writing tasks successively, the language learners in the indirect feedback group who received an error code in revising their essays significantly outperformed those in the direct feedback group.

Also, Rahimi ([2009](#)) examined the influence of written corrective feedback on Iranian EFL learners' writing accuracy over time. Two groups of learners participated in this study: the experimental group had indirect feedback but the control group received general comments and no written corrective feedback. Both groups wrote four essays during a term. The errors of the experimental group were underlined and coded with the grammar categories. At the end of the study, the researcher had an interview with the learners and the analysis of the results showed that learners in the control group who did not have any written corrective feedback on their grammatical structures were discouraged and had no motivation. Furthermore, the findings showed that corrective feedback assists learners to develop their writing over time.

On the other hand, some studies have found the positive effects of direct corrective feedback on written accuracy. For example, Chen and Li ([2009](#)) found that direct corrective feedback was more effective than indirect correction on Chinese learners' accuracy. They divided participants (n = 54) into three groups: control group, direct feedback group, and indirect feedback group. Both feedback groups significantly outperformed the control group on linguistic accuracy in argumentative essays during the experiment and in subsequent writings. Moreover, results indicated that the learners who received direct feedback did better than those who received indirect feedback.

Bitchener and Knoch ([2010](#)) explored whether corrective feedback can assist advanced L2 learners, with a high level of accuracy in two functional uses of the English article system and further increase that level of accuracy; also whether there is a differential effect for various types of feedback on any observed improvement. Differences were significant in the accuracy level on the immediate post-test piece of writing between the control group and all treatment groups; and also, on the delayed post-test piece between the control and indirect groups and the two direct treatment groups. They concluded that direct feedback is more useful to EFL writers as it explicitly presents what is incorrect and how it should be written correctly, reducing language learners' confusion over teachers' feedback. They further stated, this type is also suitable to language learners with low proficiency levels, who are not able to self-correct their errors even when they are marked for them (Ellis, [2009](#); Ferris & Hedgcock, 2005; Ferris & Roberts, [2001](#)). As in a comprehensive study of error analysis among second language learners with different levels of proficiency and their understanding of errors Suhono ([2017](#)) found most of the students did not understand about grammatical errors. Analyzing the students' writings for errors based on surface strategy taxonomy (846 sentences), he stated that the language learners with low level of proficiency in writing might not have this ability to identify their errors and correct them even when they know the location of their errors.

Almasi and Tabrizi (2016) investigated the effect of various types of written corrective feedback on 80 Iranian EFL students' writing accuracy conducting a quasi-experimental study. Their findings showed that learners in the experimental group receiving direct feedback outperformed the control group with no feedback in their writing accuracy.

Kim (2012) investigated the effects of direct and indirect corrective feedback on the improvement in writing accuracy in using prepositions and the subject-verb agreement in two different settings, namely, the classroom setting and through an electronic online communications channel during the semester. The posttests given to the students throughout the semester and the written communication data by 25 participants in an online discussion were examined to investigate the effects of various types of feedback on writing accuracy in different contexts. Result of A two-factor ANOVA over three treatment sessions and the analysis of the improvement in writing accuracy revealed that both the direct and indirect CFs influence form-related writing accuracy of two linguistic errors in post tests conducted in class. However, there was no significant improvement in the writing accuracy in written data related to the electronic communication channel.

Some studies have shown that neither direct nor indirect corrective feedback lead to accuracy gains. For instance, Chandler (2003) explored the effect of direct and indirect feedback on students' writing accuracy using data from experimental and control group. It was revealed that direct feedback was more effective than indirect feedback in students' uptake i.e. the immediate revision. However, there were no significant differences in grammatical accuracy in texts written later. This showed that type of feedback did not affect students' retention of grammatical accuracy in writing.

In a quasi-experimental study, Alharrasi (2019) investigated the short and long term effects of direct and indirect corrective feedback on Omani EFL learners' newly learned linguistic structures of the comparative and prepositions of space. The findings revealed that both types of feedback positively affected learners' written accuracy in terms of the comparative structure but not prepositions of space. The delayed posttest given to the groups about 6 weeks after the posttest showed that none of the feedback types affected students' newly learned structures in the long-term.

In four case studies Storch and Wigglesworth (2010) investigated uptake and retention of indirect and direct corrective feedback on ESL students'L2 writing in Australia. Learners' engagement with feedback was focused on in the study to achieve a better appreciation of why some feedback is taken up and retained and some is not. Analysis of learners' transcribed pair talk showed that uptake and retention might be influenced by many linguistic and affective factors, including the type of error in L2 writing students' writing, attitudes, beliefs and goals.

### 2.5. Empirical studies on the effectiveness of direct and indirect corrective feedback in combination with degree of focus, explicitness, codification, revision, and channel (Oral vs. Written)

A number of studies have examined the effectiveness of direct and indirect feedback strategies in combination with other strategies e.g., degree of focus, explicitness, codification, or revisions. Investigating the effect of specific kinds of corrective feedback on L2 students' accuracy of writing, Sarré et al. (2019) found statistically significant differences between different treatment regimes such as focused, unfocused, direct, and indirect in the context of computer assisted language learning. They found that unfocused indirect CF (with metalinguistic comments on the nature of errors) combined with extra computer-mediated micro-tasks over a certain period of time (24 weeks) was the most efficient CF type in this context.

Some studies, examining the effect of indirect feedback strategies, have made a further distinction between those that do or do not use a code. Indirect Coded corrective feedback (ICCF) points to the exact location of an error, and the type of error involved is indicated with a code (for

example, PS means an error in the use or form of the past simple tense). Indirect uncoded feedback refers to instances where the teacher underlines an error, circles an error, or places an error tally in the margin, but, in each case, leaves the student to diagnose and correct the error. Tang and Liu (2018) reported the learners had a positive attitude towards coded feedback. Similar results were reported by Ferris and Roberts (2001).However, carrying an action research, Westmacott (2017) reported that indirect feedback prompts deeper cognitive processing and learning and are favored by students. However, his study did not have a control group to statistically verify its claim. A study by Rizkiani et al. (2019) reported significant effectiveness of coded feedback (errors marked with codes).

Investigating the effect of revisions, Karim and Nassaji (2020) investigated the influence of different treatment conditions (direct feedback, underlining only, underlining + metalinguistic cues) on both text revisions and delayed writing. The results showed that all the three feedback groups significantly outperformed the control group in the revision and delayed writing tasks. Rahimi (2019) compared the effectiveness of focused and comprehensive error correction as well as revision on Iranian EFL students' writing during a 15-week writing course on week one, week eight and week 14. He reported that the focused group that was not required to do revisions were more successful than the comprehensive ones in reducing their errors on week eight. However, the focused group that was also required to do revisions was more successful both on week eight and at week fourteen.

Applying the indefinite article "a" and the definite article "the" as the focus of their study, Bitchener and Knoch (2010) investigated the effectiveness of three written corrective feedback modes (direct error correction with written and oral meta-linguistic description, direct error correction with written meta-linguistic descriptions, and direct error correction only). Their participants were divided into three written corrective feedback groups and a comparison group. The findings showed that the three experimental groups worked better than the learners in the control group on the post-tests, but there were no significant differences among the written channel of corrective feedback groups in applying the English article as opposed to the oral channel. Ekiert and Di Gennaro (2021) replicated the said study. They partially confirmed Bitchener and Knoch's (2010) results. Yet, they concluded that while the focused feedback led to increased accuracy in the targeted functions of articles, the same strategy may negatively impact the remaining non-targeted article functions, especially for the group that received the most explicit correction in the form of metalinguistic explanation.

### 2.6. Research rationale

Corrective feedback is shown in the literature to trigger students' noticing which is essential for language learning. There are still several open queries related to which kind of corrective feedback elicits more attention, which kind of feedback is more effective and results in more (durable) intake (See Bitchener & Knoch, 2008; Storch & Wigglesworth, 2010). Thus, the present study attempted to explore the effect of direct and indirect types of corrective feedback on short-term and long-term retention of subject-verb agreement by Iranian EFL writers. The following research questions were proposed which were next changed to null hypotheses.

(1) Do direct and indirect corrective feedback have any comparable effects on Iranian EFL writers' short-term retention of subject-verb agreement as measured by the immediate posttest?

(2) Do direct and indirect corrective feedback have any comparable effects on Iranian EFL writers' long-term retention of subject-verb agreement as measured by the delayed posttest?

### 3. Method

#### 3.1. Design of the study
This study had quasi-experimental pretest, posttest and delayed posttest design with two experimental groups and one control group.

#### 3.2. Participants
This study was carried out in spring 2019 in Pardis English Institute, which is a reputable institute in Gonbad Kavoos with a large number of students. Sixty EFL students in the preliminary phase of the study received the Key English Test (KET). Out of this number, 45 learners (30 females and 15 males at the age range of 14–16 years old) were found to be homogeneous and were chosen for the main phase of the study. The reliability of the questionnaire was 0.95 as measured by Cronbach method. The informed written consent was taken from all the students and their parents before the study started and the students took part in the study voluntarily and based on their parents' permission.

The students were all taking an elementary course (American Family and Friends 3 by Simmons et al., 2015) at the time of the study. Two classes were assigned to serve as experimental groups, which received direct correct feedback (n = 15) and indirect corrective feedback (n = 15). The control group (n = 15) received no feedback.

#### 3.3. Instruments

##### 3.3.1. Picture description task
The instrument used in the study was the picture description task. Five different writing tasks were administered to all of the students during the semester. Each task included pictures based on which learners were required to write a story of at least 70 words in 15 minutes. The task was also assigned to all the participants as a pretest, posttest and the delayed posttest. It should be mentioned that the same picture was given to students as a picture description task to elicit students' writing samples in the pre, post and delayed posttest. Students in all of the groups were asked to write a story in the pre, post and the delayed posttest.

#### 3.4. Procedure
The participants in the main phase of the study were randomly assigned to three groups, a control group and two experimental groups. All the groups were taught by the same instructor (i.e. second researcher). The English classes met twice a week and each session lasted 90 minutes. The focus of the classes was English conversation, but students also received writing instruction during the term. At the start of the study (week 1), an image description task was assigned to all groups as a pretest. Explanations were given to the learners as to how to write their stories using the picture description task. Language learners were asked to write their stories in the simple present. During the five-week experiment (weeks 2–6), the participants were asked to write five stories with different image description tasks in order to collect 225 stories.

Direct feedback was given to the first group, indirect feedback to the second group, and the third group received no feedback.

In the direct feedback group the instructor provided the students with the correct grammatical structure (i.e. subject verb agreement) by inserting the correct form above the erroneous form, whereas in the indirect feedback group, the teacher underlined students' sentences which included subject-verb agreement errors without providing the correct linguistic forms (see Ferris, 2006 for different forms of indirect and direct corrective feedback). Students in both groups were asked to write their stories in class but revise their writings at home and submit their revised writings in the second session of every week. The following examples illustrate the two types of feedback used in the study.

1. Direct feedback
    (a). Original
       *They are sees a woman in the house.*
    (b). Corrected version
       *They see a woman in the house.*

2. Indirect feedback
(a) Original
   *The boy is a teenager. Mom and boy is sitting on a chair in a office.*

(a) Corrected version
   *The boy is a teenager. Mom and boy is sitting on a chair in a office.*

One week after the treatment was over (i.e. week 7), language learners were given the posttest and in week 11 they were given the delayed posttest to explore the effect of various types of corrective feedback on short- and long-term retention of the structure targeted by the feedback.

### 3.5. Assessment of students' writings
All the written stories were assessed by the second researcher using the following scoring system (see Shintani et al., 2014).

$$\frac{Number\ of\ points\ scored}{Number\ of\ points\ possible} \times 100$$

For every correct subject-verb agreement form supplied by the writer, 1 point was awarded. Based on the above formula, all subject-verb agreement forms used in the written stories (both correct and incorrect) were also taken into account in the scoring procedure. As suggested by the formula, the minimum and maximum possible scores were 0 and 100 respectively.

To ensure the reliability of the ratings in the pre- post and delayed posttest, 30 writings in the pretest, 30 writings in the posttest, and 30 writings in the delayed posttest (over 77 percent of the total writing samples) belonging to 30 randomly selected students were chosen and rated by the first researcher and the intrarater reliability of 94.20, 96.32 and 98.30 were obtained for the pretest, posttest and delayed posttest scores respectively.

### 3.6. Data analysis
The independent variable was corrective feedback with two levels of direct and indirect corrective feedback. The dependent variables were the short and long-term retention of the subject-verb agreement in the EFL learners' written production. Kolmogorov-Smirnov test was run to ascertain the data normality related to subject-verb agreement scores. The sig. values for subject-verb agreement scores in the pretest, posttest and the delayed posttest were 0.21 and .38 and .22 respectively, above the sig. level of .05., Thus, the parametric procedure of One-way ANOVA was utilized to check the null hypotheses of the study. Scheffe post hoc test was also used to analyze possible group differences.

## 4. Results

### 4.1. Findings related to research questions 1
Table 1 below displays the descriptive statistics including means and standard deviations related to subject-verb agreement scores of all the groups.

As displayed in the table, the mean scores of control, direct and indirect group were 49.73, 60. 06, and 45.53 respectively.

| Table 1. Descriptive Statistics of the Groups' Pretest | | | | | |
|---|---|---|---|---|---|
| Group | N | Mean | Std. Deviation | Min. | Max. |
| Control | 15 | 49.7333 | 19.31493 | 22.00 | 80.00 |
| Direct | 15 | 60.0667 | 18.83942 | 20.00 | 93.00 |
| Indirect | 15 | 45.5333 | 21.42051 | 12.00 | 100.00 |
| Total | 45 | 51.7778 | 20.39038 | 12.00 | 100.00 |

To see if there were significant differences between the groups in the pretest, the following table needs to be examined.

As shown in the above table, the sig. value is .133. Therefore, there were not any significant differences between the groups at the beginning of the study.

Since pretest-posttest data were used for the comparison of three groups on the dependent variable, the mean scores of the three groups in the post-test are reported below.

Table 2 and 3 shows the mean scores of subject-verb agreement in the posttest. As shown in the table, the mean scores of control, direct and indirect feedback groups were 59.20, 69.93, and 69.06 respectively.

To see if there were significant differences between the groups in the posttest, Table 4 needs to be examined.

As shown in Table 4, there were no significant differences between the performances of the three groups in the posttest. It could be said that direct and indirect corrective feedback did not have a significant effect on EFL writers' short-term retention of subject-verb agreement ($p = 0.29$) at sig.<0.05. Therefore, the first null hypothesis of the study which stated that direct and indirect corrective feedback do not have any comparable effects on Iranian EFL writers' short-term retention of subject-verb agreement as measured by the immediate posttest was accepted.

| Table 2. One-way ANOVA on the Pretest of the Three Groups | | | | | |
|---|---|---|---|---|---|
| | Sum of Squares | Df | Mean Square | F | Sig. |
| Between Groups | 1678.178 | 2 | 839.089 | 2.121 | .133 |
| Within Groups | 16,615.600 | 42 | 395.610 | | |
| Total | 18,293.778 | 44 | | | |

| Table 3. Descriptive Statistics of the Groups' Posttest | | | | | |
|---|---|---|---|---|---|
| Group | N | Mean | Std. Deviation | Min. | Max. |
| Control | 15 | 59.2000 | 23.46182 | 19.00 | 93.00 |
| Direct | 15 | 69.9333 | 16.56359 | 38.00 | 89.00 |
| Indirect | 15 | 69.0667 | 21.45582 | 40.00 | 100.00 |
| Total | 45 | 66.0667 | 20.81237 | 19.00 | 100.00 |

| Table 4. One-way ANOVA on the Posttest of the Three Groups | | | | | |
|---|---|---|---|---|---|
| | **Sum of Squares** | **Df** | **Mean Square** | **F** | **Sig.** |
| Between Groups | 10.66.533 | 2 | 533.267 | 1.245 | .298 |
| Within Groups | 17.992.267 | 42 | 428.387 | | |
| Total | 19.58.800 | 44 | | | |

### 4.1.1. Findings related to research question 2

Since the delayed posttest data was used for the comparison of three groups on the dependent variable, the mean scores of the three groups in the delayed posttest are reported below.

Table 5 shows the mean scores of subject-verb agreement in the delayed posttest. As presented in the table, the mean scores of control, direct and indirect feedback group were 60.80, 59.13, and 35.86 respectively.

To see if there were significant differences between the groups in the delayed posttest, Table 6 needs to be examined.

As displayed in Table 6, significance value is smaller than .05 (.02 < .05), so there must be some significant difference between the performance of the groups in the delayed post-test. In order to locate the difference, the Scheffe post hoc test was run. Table 7 below indicates the results.

As shown in Table 7, direct corrective feedback did not significantly affect EFL learners' long-term retention of subject-verb agreement as sig. value of 9.68 is above sig. value of 0.05. However, as displayed in the table, indirect corrective feedback did have a negative significant effect on EFL learners' long-term retention of subject-verb agreement. Because the sig. value of .04 is below 0.05.Therefor, the second null hypothesis of the study which stated that direct and indirect corrective feedback do not have comparable effects on Iranian EFL student's long-term retention of subject-verb agreement is rejected.

| Table 5. Descriptive Statistics of the Groups' Delayed Posttest | | | | | |
|---|---|---|---|---|---|
| **Group** | **N** | **Mean** | **Std. Deviation** | **Min.** | **Max.** |
| Control | 15 | 60.8000 | 29.67009 | 13.00 | 100.00 |
| Direct | 15 | 59.1333 | 21.69551 | 29.00 | 93.00 |
| Indirect | 15 | 35.8667 | 27.56775 | 10.00 | 95.00 |
| Total | 45 | 51.9333 | 28.35762 | 10.00 | 100.00 |

| Table 6. One-way ANOVA on the Posttest of the Three Groups | | | | | |
|---|---|---|---|---|---|
| | **Sum of Squares** | **Df** | **Mean Square** | **F** | **Sig.** |
| Between Groups | 5828.933 | 2 | 2914.467 | 4.142 | .023 |
| Within Groups | 29,553.867 | 42 | 703.663 | | |
| Total | 35,382.800 | 44 | | | |

| (J)Group Group | Mean Difference (I-J) | Std. Error | Sig | 95% Confidence Interval for Mean | |
|---|---|---|---|---|---|
| | | | | Lower Bound | Upper Bound |
| Control DirectIndirect | 1.6666724.93333 | 9.686179.68617 | .985.046 | −22.9138.3528 | 26.247249.5138 |
| Direct ControlIndirect | − 1.6666723.26667 | 9.686179.68617 | .985.067 | −26.2472–1.3138 | 22.913847.8472 |
| Indirect ControlDirect | −24.933333–23.26667 | 9.686179.68617 | .046.067 | −49.5138–47.8472 | −.35281.3138 |

**Table 7. Results of post hoc test (Scheffe of delayed posttest)**

## 5. Discussion and conclusion

Research question one in this study asked if direct and indirect corrective feedback have any comparable effects on Iranian EFL writers' short-term retention of subject-verb agreement as measured by the immediate posttest. The ANOVA test did not reveal any improvement in test scores from the pretest to the immediate posttest based on different types of corrective feedback. Therefore, it was suggested that exposure to direct or indirect written corrective feedback did not help the learners' short-term retention of subject-verb agreement. The results are in line with those reported by Alharrasi (2019) who found that indirect and direct corrective feedback did not positively affect students' writing accuracy in terms of prepositions of space. Furthermore, the results echo Chandler's (2003) finding that the type of feedback (direct or indirect) did not affect students' retention of grammatical accuracy in writing. Moreover, the results are in line with those reported by Suhono (2017), who found that the language learners with lower levels of writing proficiency may not be able to identify and correct their errors even when they know the location of their errors.

However, the findings are in contrast with Ellis and Sheen's (2007) study, which compared the effects of focused and unfocused corrective feedback on the accuracy of Japanese learners' use of the English definite and indefinite articles to denote first and anaphoric reference in written narratives. Only the article errors in three pieces of narratives were corrected in the focused group, while the article errors as well as other errors were corrected in the unfocused group. Both groups improved from pretest to posttests on both an error correction test and on a test involving a new piece of narrative writing and also outperformed the control group, which received no correction, on the second posttest. The corrective feedback was equally effectual for both the unfocused and focused groups. Investigating the effectiveness of six types of corrective feedback in a blended learning environment, Sarré et al. (2019) reported that any type of CF is better than no CF at all. Bitchener and Knoch (2010) reported the same comparing direct error correction only with that complemented with oral or written meta-linguistic descriptions. In other words, providing corrective feedback was better that not providing it at all.

The findings were not in agreement with Bitchener and Knoch's (2008) finding that written corrective feedback is effective in helping ESL language learners improve their writing accuracy. Based on the results, they reported two main findings: (1) learners who received all three types of written corrective feedback (i.e. direct corrective feedback, oral and written metalinguistic explanation; direct corrective feedback and written metalinguistic explanation; and direct corrective feedback only) had more improvement in accuracy than those who did not receive written corrective feedback, (2) that there was no difference in the extent to which migrant and international language learners improved their writing accuracy as a consequence of written corrective feedback.

The findings are also incongruent with Kim (2012) who found the positive effects of indirect and direct corrective feedback in form-related writing accuracy in the posttest. The results were also incongruent with Shintani et al. (2014) who found that direct corrective feedback positively affected Japanese EFL learners' use of complex structures in writing. Similarly, the findings were not in line with Saadi and Saadat (2015) who found that direct and indirect corrective feedback positively affected learners' writing accuracy.

The second research questions asked whether direct and indirect corrective feedback have any comparable effects on Iranian EFL writers' long-term retention of subject-verb agreement as measured by the delayed posttest. The ANOVA test did not reveal any improvement in test scores from the pretest to the delayed posttest based on different types of corrective feedback. Even there was a significant decline in the scores of the indirect feedback group compared to the control group meaning that indirect feedback had a significant negative effect on the performance of the group in the delayed posttest. Therefore, it was suggested that exposure to direct or indirect written corrective feedback did not help the learners' long retention of subject-verb agreement. The results are in line with Alharrasi (2019) who found that indirect and direct corrective feedback did not positively affect students' long-term retention of the targeted linguistic structures (i.e. the Comparative and Prepositions of space). Furthermore, the results echo Khanlarzadeh and Nemati's (2016) study. They reported that although the experimental group outperformed the control group in revision of the writing tasks, no significant difference was found after a one month interval in new pieces of writing. It could be argued following Storch and Wigglesworth (2010) that retention might be influenced by many linguistic and affective factors.

The results are also consistent with earlier studies in the literature (e.g., Polio et al., 1998; Truscott, 2007; Truscott, 2008; Truscott & Hsu, 2008), which found no significant effect for corrective feedback on EFL learners' writing. The results indicate that written corrective feedback did not have any positive effect on Iranian EFL writers' retention of subject-verb agreement. This shows that, feedback alone, irrespective of its type, is not sufficient to help the retention of subject-verb agreement among EFL writers. The findings might be related to the participants' age and language proficiency. As they were young learners, they might not rely sufficiently on cognitive skills as adults do. It could be suggested that teachers focus more on exposure rather than correction in their classes and use longer treatment to allow language learners' more engagement with the feedback provided.

However, the findings are in contrast with Karim and Nassaji's (2020) study, which showed that direct feedback, underlining only, underlining + metalinguistic cues had positive effects on both text revisions and delayed writing. Replicating the above study, Karim and Nassaji (2020) confirmed its results, but concluded that WCF may negatively impact the non-targeted items i.e., those were left non-corrected.

Briefly, corrective feedback provided indirectly or directly, but not supported by metalinguistic keys (see e.g., Gharanjik & Ghoorchaei, 2020; Shintani, 2014) may not be effective in the correction of errors, perhaps because it does not trigger a high enough level of awareness by the student when faced with doubts about the language being studied. The non-provision of metalinguistic keys can be one of the important causes that explain why the participants kept making the same kinds of mistakes in their texts. Also, it could be argued that without observable short term development, long term improvement in correcting errors pointed out by teachers is not possible (D.R. Ferris, 2011).

Rather than providing corrective feedback, the role of the teacher is to help language learners become autonomous. The teacher has at his disposal various resources to help him/her organize and conduct the educational process. Success in teaching is largely determined by the teacher's ability to methodically use effective scaffolding, strategy training, dialogic communication, increased emotionality, reflection, internship, gamification of classroom activities, and other

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learning tools (Daley, 2020; Nel et al., 2020). Obsession with corrective feedback may deprive the teacher from devoting precious time and energy on such matters of importance.

To shed more light on this inconclusive area of research, future research needs to be conducted in authentic classrooms, so that the feedback is given within the context of a longer instructional program, with ecologically valid writing tasks, and where revision is meaningful for the language learners because it has a clear purpose (e.g., assessment). The interaction of different learner variables such as age, gender, L1 background and proficiency level which were not dealt with in the present research could be investigated in further research.

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