

Effects of Metalinguistic Feedback on Grammatical Accuracy of Iranian Field (In)dependent L2 Learners' Writing Ability¹

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Received: 18/06/2017

Accepted: 22/04/2018

Abstract

An increasing number of studies have investigated the effects of different types of corrective feedback. However, doubts have been raised whether field (in)dependent (FI/FD) L2 learners benefit differently from the explicit type of corrective feedback (i.e., metalinguistic). This study examined the (possible) effects of metalinguistic feedback on FI/FD intermediate L2 learners' writing accuracy. To this aim, 52 Iranian intermediate L2 learners in intact classes were classified into FI/FD learners through Group Embedded Figures Test (GEFT). They were, then, randomly assigned into 2 experimental and 1 control groups. Experimental groups received metalinguistic feedback and the control group received no feedback. Two sample IELTS tests (i.e., the Writing section) were used as the pretest and posttest to measure the participants' learning of English articles as a result of metalinguistic feedback. Data were analyzed through ANCOVA and post-hoc. Although the results revealed that both the FI/FD learners benefited from metalinguistic feedback, the FD participants outperformed the FI ones. Findings have implications for L2 teachers and researchers to help L2 learners with different cognitive styles to improve their writing accuracy.

Keywords: Corrective Feedback; Field (In)dependent; Metalinguistic Feedback; Grammatical Accuracy; Writing Ability

1. Introduction

Writing is a difficult skill for L2 learners. The root cause of this difficulty concerns two issues: generating ideas and putting these ideas into a readable text (Richards & Renandya, 2002). Linguistic accuracy is characterized as one aspect of

¹Please cite this paper as follows:

Hashemian, M., & Farhang-Ju, M. (2018). Effects of metalinguistic feedback on grammatical accuracy of Iranian field (in)dependent L2 learners' writing ability. *Journal of Research in Applied Linguistics*, 9(2), 141-161.

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L2 writing ability, and effective L2 pedagogy should include attention to linguistic forms (Doughty, 2003). The noticing hypothesis gives support to Doughty's (2003) claim in that only items that are attended to by L2 learners in the linguistic input are likely to be acquired (Schmidt, 1990).

One way to draw attention to linguistic forms is Long's focus-on-form approach (Long & Robinson, 1998)—a pedagogical intervention that has received considerable attention in second language acquisition (SLA) (see Norris & Ortega, 2000). According to Ellis (2005), one of the pedagogical tools identified as a potential focus-on-form instrument is corrective feedback. It is generally agreed that L2 teachers use corrective feedback as a pedagogical technique to draw L2 learners' attention to erroneous utterances (Suzuki, 2004). Thus, corrective feedback bears significance because it draws attention to errors in L2 learners' interlanguage; accordingly, it aids them to notice L2 features that have not yet been learnt or have been partially learnt (Doughty & Williams, 1998).

Corrective feedback is defined as "the feedback that learners receive on the linguistic errors they make in their oral/written production in an L2" (Sheen & Ellis, 2011, p. 593). Although a good range of studies (e.g., Bitchener, Young, & Cameron, 2005; Ferris & Helt, 2000; Rahimi Domakani, Roohani, & Abdollahian, 2010; Rassaei, 2017; Rassaei, Moeinzadeh, & Youhannaee, 2012) have provided evidence for the efficacy of corrective feedback, doubts about a number of issues (e.g., the moderating effects of types of learning, transfer processes, aptitude, affective factors, and individual differences) still remain to be resolved (e.g., Hyland, 2003; Rassaei, 2015a; Sheen, 2007). Hence, it is necessary to take into account individual learner factors to find ways of applying different types of corrective feedback to the classroom (Guenette, 2007), one of which is the L2 learner's cognitive style.

The sustained body of literature leads to increased attention to cognitive styles. Among all the cognitive styles, field (in)dependence (FI/FD), which mirrors individuals' mode of perceiving, remembering, and thinking, has emerged as the most frequently studied cognitive style that has the potential benefits for educational implications (e.g., Hashemian, Jafarpour, & Adibpour, 2015; Kunnath, 2000; Salmani-Nodoushan, 2007). FI/FD constitutes an important design variable that may modify the effects of corrective feedback on the development of L2 knowledge. As a result, before any conclusion can be made regarding the efficacy of different types of corrective feedback, more studies that investigate the effects of corrective feedback on L2 development along with the moderating effects of individual learner factors should be undertaken. Hence, the main purpose of the current study was to investigate if Iranian FI/FD intermediate L2 learners benefit differently from metalinguistic corrective feedback.

2. Literature Review

2.1. Metalinguistic Feedback

The burgeoning interest in investigating the efficacy of metalinguistic feedback has expanded in recent years. Metalinguistic feedback explains the use of correct L2 linguistic forms (Ellis, 2009). Metalinguistic feedback provides L2 learners with some form of explicit comment about the nature of the errors they have made. The explicit comment can take two forms. One is the use of error codes that consist of abbreviated labels for different kinds of errors. The labels can be placed over the location of the error in the text or in the margin. L2 learners should work out the correction needed from the clue provided. As for the other type of metalinguistic feedback, L2 learners need to, first, locate the error and, then, work out the correction (see example # 1):

➤ Example # 1

art art WW art

- *A dog stole bone from butcher. He escaped with having bone.*

*art = indefinite article

*WW art = definite article

The second type of metalinguistic corrective feedback consists of providing L2 students with metalinguistic explanations of their errors (see example # 2):

➤ Example # 2

(1) (2) (3)

- *A dog stole bone from butcher. He escaped with having bone.*

- ✓ (1), (2) You need *a* before the noun when a person or thing is mentioned for the first time.
- ✓ (3) You need *the* before the noun when the person or thing has been mentioned previously. (Ellis, 2009, p. 101)

Metalinguistic feedback falls at the explicit end of the corrective feedback spectrum and is an explicit type of corrective feedback. Metalinguistic feedback has an effect on L2 learners' explicit knowledge (Bitchener, 2012). SLA scholars have provided solid evidence that lends support to Bitchener's (2012) claim that metalinguistic explanation promotes the development of explicit knowledge (e.g., Rassaei, Moeinzadeh, & Youhannaee, 2012; Shintani & Ellis, 2013). In this sense, metalinguistic feedback can be seen as salient and noticeable to L2 learners because it explicitly provides them with the opportunity to diagnose their ungrammatical utterances. It is suggested that the role of saliency enhances the strength of the

corrective function of metalinguistic feedback for L2 learners (Bitchener, 2012). In fact, metalinguistic feedback can scaffold L2 learners to notice the gap between their knowledge and the received metalinguistic feedback.

Interest in the contribution of metalinguistic feedback was expanded in L2 literature after an increasing number of studies investigating the relative effectiveness of metalinguistic feedback (e.g., Bitchener & Knoch, 2008, 2010; Bitchener, Young, & Cameron, 2005; Sheen, 2007; Sauro, 2007). Two studies reported by Bitchener and Knoch (2008, 2010) indicated that there was no difference between the direct corrective feedback group and those who received (1) written metalinguistic feedback and (2) written and oral metalinguistic feedback on two frequent uses of the English article system (i.e., the use of the indefinite article for first mention and the definite article for subsequent mentions).

On the other hand, Bitchener, Young, and Cameron's (2005) findings of a study on advanced L2 learners suggested that oral metalinguistic feedback with direct error correction was more effective than direct error correction alone. In another study conducted on intermediate learners by Sheen (2007), the findings provided evidence that those who had received written metalinguistic feedback as well as direct error correction performed significantly better than those who had received only direct error correction.

Moreover, Sauro (2007) compared the effects of direct and metalinguistic feedback through computer-mediated communication on the development of L2 knowledge and production accuracy. Her results showed a significant advantage of metalinguistic information.

2.2. Individual Factors

As Guenette (2007) suggest, one of the reasons for the uncertainty of the efficacy of corrective feedback lies in the failure to design corrective feedback studies that systematically investigate different types of individual differences (i.e., level of proficiency, cognitive style, aptitude, etc.) that are likely to impact how effective corrective feedback is. One way forward, then, might be for L2 researchers and teachers to systematically identify the various options available for correcting L2 students' writing to design future studies and make pedagogical decisions.

In the light of the growing body of research, investigating the efficacy of corrective feedback along with L2 learners' factors has been a gathering momentum over the past decade inside the mainstream of L2 learning (e.g., Goo, 2012; Hyland, 1998, 2000, 2003; Rassaei, 2015a; Sheen, 2007, 2011; Swain, 2006; Swain & Lapkin, 2002).

Within this broad movement, Sheen (2007, 2011) conducted two studies to investigate the potential influence of three individual factors (i.e., analytic ability, anxiety, and learners' attitudes) on uptake and retention for both oral and written corrective feedback. The findings of her earlier study suggested that the learners with higher levels of analytic ability benefited more from direct corrective feedback (with)out metalinguistic corrective feedback than the learners with low metalinguistic ability. Moreover, the high-aptitude learners who had received metalinguistic feedback outperformed the others. In another study, Sheen (2011) revealed that the learners' attitudes and their analytic ability mediated the effects of oral and written corrective feedback, but anxiety only mediated the effects of oral corrective feedback.

More than a decade ago, in a socioculturally oriented studies, Swain (2006) and Swain and Lapkin (2002) found that the L2 learners who felt that corrective feedback had violated their individual beliefs about language conventions or altered their intended meaning (e.g., through the use of reformulations) resisted to receiving any feedback.

Similarly, Hyland's (1998, 2000, 2003) results shed light on the fact that the L2 learners tended to respond more positively to feedback if they had considered grammatical accuracy to be important in their writings; however, resistance occurred if they felt the teacher had tried to control the feedback process or had ignored their individual goals.

Corrective feedback, along with the moderating effects of L2 learners' working memory capacity, was investigated by Goo's (2012) recently published paper who reported that the Korean L2 learners' development of L2 grammar who had received the effects of recasts was the same as those who had received metalinguistic feedback. Furthermore, the results indicated that the L2 learners' working memory could only predict the efficacy of recasts.

In another study reported by Lyster and Izquierdo (2009) that supports Goo's findings, the researchers examined the effects of recasts and prompts on the acquisition of grammatical gender by the L2 learners of French. The results revealed that both feedback types were equally effective. In 2014, Rassaei examined the moderating effect of FI/FD cognitive styles on the efficacy of corrective feedback. His findings indicated that only the FI learners' grammatical accuracy improved as a result of recast. Finally, in a very recent study, Rassaei (2015a) examined the extent to which high-anxiety and low-anxiety L2 learners benefited from recasts and metalinguistic feedback. His findings provided evidence that both recasts and metalinguistic feedback could be effective to promote L2 learning.

Different from previous empirical studies, two meta-analyses were conducted by Li (2010) and Lyster and Saito (2010). Li indicated that age was not a

significant predictor of the efficacy of corrective feedback. However, Lyster and Saito showed that the younger learners benefited significantly more than the older learners from corrective feedback.

As the above review suggests, little is known whether the cognitive styles of FI/FD mediate the effects of metalinguistic feedback. Thus, this study was an attempt to investigate the potential variables (i.e., cognitive styles) within a single study design that may mediate the effects of corrective feedback.

2.3. Cognitive Style

Research indicates that one of the most salient factors showing differences between L2 learners is their cognitive style (Daniels & Moore, 2000; Hashemian & Fadaei, 2012; Hsu & Dwyer, 2004). L2 learners bring different cognitive styles to their learning experience. Through a much clearer understanding of their styles, L2 learners can enhance their learning; however, lack of awareness of these styles may hinder the L2 learning process.

A sustained body of literature gives increasing attention to cognitive styles. Of the various types of cognitive styles, FI/FD has emerged as the most frequently studied (e.g., Khalili Sabet & Mohammadi, 2013; Rostampour & Niroomand, 2014; Worley & Moore, 2001).

In one study, Dwyer and Moore (2001) suggested that combining specific directions and color-coded illustrations in the content of the instructional materials helped the FI/FD learners perform equally well. In another study, Hsu and Dwyer (2004) investigated the impacts of various levels of adjunct questions inserted within hypermedia programs. Their results indicated that using higher-order adjunct questions for certain kinds of learning improved the FI/FD learners' learning and their achievement level. Cao (2006) also investigated the relationship between FI/FD cognitive styles and various cueing strategies in a computer-based instructional environment. The results indicated that the FI learners performed better than the FD learners.

Salmani-Nodoushan (2007) investigated the FI/FD cognitive styles on systematic variance in Iranian EFL students overall and task-specific performance in task-based reading comprehension tests. The results shed light on the fact that L2 learners' FI/FD cognitive styles affected the L2 learners' test performance in the proficient, semiproficient, and fairly proficient groups, but this was not the case in the low-proficient group. In addition, the results showed that the participants' performance on specific tasks such as true-false, sentence completion, outlining, scanning, and elicitation in all proficiency groups was highly dependent on the FI/FD cognitive styles.

Yarahmadi (2011) examined the FI/FD cognitive styles and ownership writing differences. The results revealed that there was a relationship among the (fe)male FI/FD learners and ownership in writing. She concluded that the FD learners' use of first person singular pronouns and/or possessive adjectives was significant. She argued that the possibility for L2 learners to improve their writing ability increases by being aware of style areas in which they feel less comfortable.

Khalili Sabet and Mohammadi (2013), further, investigated the relationship between FI/FD cognitive styles and reading comprehension abilities of L2 readers. The results of this survey indicated that the FI intermediate learners outperformed the FD learners in understanding specific information, covert message in the text, inferencing. Finally, Hashemian, Jafarpour, Adibpour (2015) investigated the relationship of the FI/FD cognitive styles and L2 reading performance on five reading tasks of true-false, sentence completion, outlining, elicitation of writer's view, and scanning. Their findings provided evidence that a high level of FI could be associated with high scores on the reading tasks of true-false, sentence completion, outlining, and scanning.

Past research identifies appropriate instructional design strategies that might accommodate the differential learning characteristics of L2 learners with different FI/FD cognitive styles, though a number of studies investigating the issue are restricted. Thus, this study aimed to investigate the potential variables (i.e., cognitive style) within a single study design that may mediate the effects of corrective feedback. To this aim, the following research question was addressed:

1. Does metalinguistic feedback significantly affect Iranian FI/FD intermediate L2 learners' writing grammatical accuracy? If yes, which type of cognitive style benefits more?

3. Method

3.1. Participants

The participants were 52 L2 learners in a language teaching institute (Pazhuhesh Institute) in Iran—based on convenience sampling—whose ages ranged from 18-35. They were either graduate or university students. They were both male and female Persian native speakers with the Persian sociocultural background and had never lived in any English-speaking country. They had studied English between 5 and 8 years. The FI/FD intermediate L2 learners in intact classes were assigned into one of the three conditions: FI metalinguistic ($n = 19$), FD metalinguistic ($n = 17$), and control ($n = 16$). The questionnaire initially administered provided demographic information about the participants (i.e., race, age, and L1), and the Oxford Placement Test (OPT; Allen, 2004) was run to insure the homogeneity of the participants.

In addition to the participants, one proficient and experienced L2 teacher was invited to act as the error corrector during the treatment sessions. Moreover, with M.A. in TEFL and more than 11 years teaching English experience, he was more skillful and experienced than the regular teachers of the intact classes. The instructor was carefully trained in advance how to provide metalinguistic feedbacks in response to the participants' errors.

3.2. Instruments

To insure the homogeneity of the participants, the OPT (Allen, 2004), with 100 multiple-choice questions and reasonable measures of validity and reliability, was used to test the participants' proficiency at the outset of the study. The OPT is a reliable and efficient test to place L2 learners at different levels of language ability. Allen (2004) claims that the OPT is capable of being utilized with any number of L2 learners to ensure efficient, reliable, and accurate placing of them at all levels from elementary to advanced. According to Allen, the OPT has been calibrated against the proficiency levels based on the Common European Framework of Reference for Languages and the Cambridge ESOL Examinations. Also, Birjandi and Sayyari (2010) established the concurrent validity of the OPT with TOEFL scores. The results revealed a high correlation between the OPT and TOEFL scores. Meanwhile, the reliability of the test, calculated through Cronbach's alpha, was found to be 0.75.

Another tool developed by Witkin, Oltman, Rastkin, and Karp (1971) was the Group Embedded Figures Test (GEFT) that was used to classify the participants into FI/FD learners. This is a nonverbal test that requires a minimum level of language skill, and the psychometrical properties of the test have been investigated. The reported Spearman-Brown reliability coefficient of GEFT is 0.82. Moreover, Panek, Funk, and Nelson (1980) confirmed the adequacy estimates of the internal consistency and construct validity for GEFT. The test was completed by the participants within 10 min. The Spearman-Brown reliability coefficient of GEFT was found to be 0.87.

A pretest and a posttest were, further, administered to measure the participants' learning of the L2 forms as a result of metalinguistic feedback. In order to eliminate the effect of practice as a result of using the same version of the test as the pretest and posttest, two different—but equally difficult—tests were adopted to be used as the pretests and posttests. Two university professors ensured the suitability of the tests for the intended purposes; accordingly, the validity of the tests was insured.

The writing tasks were also used to tap into the participants' controlled productive knowledge of the L2 forms. For these tasks, the participants were asked to write one coherent paragraph. The pretest, the posttest, and the treatment session

tasks were adopted from IELTS tests (i.e., Writing section 2), held in 2016. In order to calculate the reliability of the pretest and the posttest, the FI/FD learners' scores were submitted to correlation. The obtained Cronbach's alpha magnitude was 0.90, which is acceptable.

3.3. Target Form

Compared with earlier studies on the value of written corrective feedback (see Ferris, 2003), where sometimes as many as 15 linguistic forms and structures were examined, this study investigated the effect of corrective feedback for one linguistic error (i.e., articles). If categories are too broad, it is not possible to determine exactly where an error lies. Furthermore, it has been suggested (Schwartz, 1993; Truscott, 1999) that different domains of linguistic knowledge (and, therefore, different linguistic error categories) are learned in different ways. Assuming this to be the case, it is even more important that error categories should not be too broad. Thus, it can offer a good opportunity for the efficacy of corrective feedback.

Articles (i.e., definite and indefinite) were chosen as the L2 structure in this study. Following Rassaei (2015a, 2015b, 2017), the current study limited the obligatory contexts for each article. This selection was motivated by a number of reasons: First, previous research has shown that L2 learners often have difficulty using articles appropriately (Rassaei, 2015a, 2015b). Another reason was that L2 learners of intermediate level and above have already begun to acquire English articles (Young, 1996). That is, they will be appearing in their writing. Thus, they constitute an example of a structure that has been partially acquired (i.e., used but not always correctly), rather than an entirely new structure.

3.4. Operationalization

The type of metalinguistic feedback utilized in this study consisted of providing the participants with metalinguistic explanations of their errors. The numbers provided in brackets were written above the errors in the participants' writing tasks. The following is a part of one of the participants' writing task in which a comparison was made between art and technology. Both definite and indefinite article errors were corrected example # 3, selected from the data:

- Example # 3
 - *Art was an important part of everyday life many years ago. Today things has changed. People focus on technology. Smart people like to study math or science because they think art wastes their time. But I like art a lot. Many famous people also cared about art, for example,*

[1] famous actor Marilyn Manro. She was [2] a artist. In fact, she was a famous actor.

- ✓ [1] You should use **the** when you refer to specific or particular nouns.
- ✓ [2] You need **an** before the noun when the person or thing has not been mentioned previously and it starts with a vowel (a, o, u, e, i).

3.5. Procedure

The current study employed a quasi-experimental design with a pretest, treatment, and posttest, working with intact classes. One week prior to administering the OPT, the participants in the classes were provided with the questionnaire. Then, the instruments (i.e., the OPT, GEFT, the pretest, and the posttest) were administered to the participants in different sessions. In the first step, though the participants were enrolled as intermediate L2 learners in the institute, the OPT was administered to homogenize them in terms of their level of proficiency. The students scored between 56 and 70; none were excluded from the study. Based on the Common European Framework of Reference for Languages criteria, they were considered as intermediate L2 learners. Having selected the 52 L2 learners, GEFT was employed to classify them into FI/FD learners. We scored the participants' performance on GEFT based on the answer-keys provided in the manual for GEFT. GEFT is a test with 18 items. The total score was the number of the items correctly perceived. Thus, the scores varied from 0 (*highly dependent*) to 18 (*highly independent*). The higher scores represented the FI cognitive style, whereas the lower scores showed the FD cognitive style.

The FI/FD intermediate L2 learners in the intact classes were assigned into one of the three conditions: FI metalinguistic ($n = 19$), FD metalinguistic ($n = 17$), and control ($n = 16$). After assigning the FI/FD participants into metalinguistic and control groups, a pretest was administered. The FI/FD participants in the two experimental groups received corrective feedback (i.e., metalinguistic), and the one in the control group did not receive any response to their errors. One week later, the treatment (i.e., metalinguistic feedback) was provided.

Four treatment sessions were held for the participants in each group. The treatments were offered in different classes. Writing tasks, adopted from the IELTS exam, were used for the treatment sessions (i.e., metalinguistic sessions). The participants in each group were provided with the same task each session. The control group participants were not provided with any error correction on their writing tasks. The participants were required to write a 250-word essay per session. Care was taken to choose topics of equal difficulty for the testing occasions. One week after the last treatment session, the posttest was administered.

To score the tasks, the correct use of the articles was divided by the obligatory use of the articles and the number of errors made by the learners. Each writing task was graded by the instructor twice to assure consistency of the scores. Intrarater reliability was also calculated between the two ratings. The magnitude of Spearman Brown's correlation coefficient was 0.89.

4. Results

To analyze the data, the Statistical Package for Social Sciences (SPSS, version 22.0) was employed. A number of statistical analyses were conducted: descriptive analysis, ANCOVA, and post-hoc. Table 1 presents the descriptive statistics for the pretest and posttest results for all the three groups:

Table 1. *Descriptive Statistics for the Pretest and Posttest*

Group	Variable	<i>N</i>	<i>M</i>	<i>SD</i>
FI Metalinguistic	Pretest	19	27.44	3.39
	Posttest	19	32.22	4.63
FD Metalinguistic	Pretest	17	27.11	3.1
	Posttest	17	35.44	4.34
Control	Pretest	16	27.31	2.67
	Posttest	16	27.50	2.19

To determine whether there was a significant difference between the FI/FD participants who had received metalinguistic feedback and those who had not, one-way ANCOVA was carried out. The independent variable was the type of intervention (i.e., metalinguistic), and the dependent variable was the FI/FD participants' scores on the posttest. The pretest scores were considered as the covariate. Moreover, the participants' pretest scores were included as the covariate in the analysis to control for preexisting writing ability differences between the experimental and control groups.

Before conducting ANCOVA, its assumptions (i.e., reliability of covariate, linearity, homogeneity of regression slopes, and Levene's test of equality of error variance) were examined. The results assured the assumptions of ANCOVA were not violated (see Appendix A, Tables A1, A2, and A3). After adjusting for preintervention writing scores, a significant difference was found between the two groups on the metalinguistic posttest scores, $F(3, 29) = 49.66, p \leq .05$ (see Appendix A, Table A4). Moreover, the post-hoc results (see Table 2) illustrate that both the FI/FD participants who had received metalinguistic feedback outperformed the control group, whereas the FD participants benefited more from metalinguistic feedback:

Table 2. *Post-Hoc Comparison on Posttest Scores*

(I) Group	(J) Group	Sig.
FI Metalinguistic	FD Metalinguistic	.151
	Control	.009
FD Metalinguistic	FI Metalinguistic	.151
	Control	.000

5. Discussion

L2 researchers (e.g., Ferris, 2003; Sheen, 2007) have attributed a pivotal role to written corrective feedback. Much of the existing literature has limited the focus on investigating the comparison between different types of corrective feedback and ignoring the potential effects of external/internal variables that may mediate the efficacy of corrective feedback. As mentioned before, one of these factors is L2 learners' FI/FD cognitive styles. To shed light on the issue, this study was conducted to draw attentions to deep-seated differences among FI/FD learners and the extent to which they benefit from metalinguistic feedback. The results of ANCOVA ($F[2, 29] = 49.66, p \leq .01$) provided evidence that the experimental and control groups were significantly different. This implies that both the FI/FD participants benefited from metalinguistic feedback, whereas the FI/FD participants' writing grammatical accuracy assigned into the control group did not improve over time.

The results of this study are in the line with a number of studies (e.g., Bitchener, Young, & Cameron, 2005; Sauro, 2007; Sheen, 2007) that provided evidence for the efficacy of metalinguistic feedback. In the light of the effectiveness of metalinguistic feedback, several potential factors offer good illustration of the profound significance of metalinguistic feedback in this study. One critical factor attributed to the effectiveness of metalinguistic feedback is the output-triggering nature of metalinguistic feedback. Metalinguistic feedback promotes the grammatical accuracy of L2 learners. As Rassaei (2015b) claims, the provision of pushed feedback (i.e., metalinguistic feedback) develops L2 learners' grammatical accuracy, so it can be claimed that the development of the participants' grammatical accuracy indicates the output-triggering nature of metalinguistic feedback.

One potential reason in explaining the obtained results is the learners' age. Ausubel (1964) maintains that, unlike children, adult L2 learners can profit from grammatical explanations. This is especially true when adult L2 learners' contact with the L2 is limited to L2 classroom (DeKeyser, 2000). That may be the reason that the effects of the metalinguistic feedback were found to be more profound on the participants in the current study.

Another reason that may account for the results is the depth of processing facilitated by metalinguistic feedback (Carroll, 2001), as compared to the process

facilitator by direct feedback (Panova & Lyster, 2002). Carroll (2001) suggested that adults are equipped with “mature metalinguistic capacities” which aid them to “represent units of language as conceptual categories. They, therefore, can, in principle, and apparently do, use feedback to learn the properties of the target system” (p. 244). This issue is closely associated with adult L2 learners’ analytic ability in that they are dependent on their cognitive resources. Thus, their analytic ability becomes central to their learning.

As for the second part of the research question, the findings of this study are in line with several studies that have indicated that there are no significant differences in achievement between FI/FD learners (Worley & Moore, 2001). However, the FD participants outperformed the FI ones. A good point in explaining the results is exploring the differences between FI/FD learners. In a relatively old position, Witkin, Moore, Goodenough, and Cox (1977) explained one reason for the superiority of the FD participants compared to the FI ones is that FD learners require more explicit instruction, more detailed descriptions about instructional objectives, and more externally reinforcement than FI L2 learners. Jones (1993), further, claimed that FD learners perform better in structured situations and prefer directions. They rely more on others for information and feedback. Also, Witkin et al. (1977) suggested that FD learners may learn most efficiently when cues are salient.

On the other hand, the potential possibility for the results of the FI participants that did not benefit as much as the FD participants is that they are less dependent on feedback and they may not learn from salient cues as FD learners do (Witkin, Moore, Goodenough, & Cox, 1977). Thus, it can be claimed that FD learners who are dependent on receiving feedback function better than FI L2 learners.

Metalinguistic feedback is salient to L2 learners because it explicitly provides them with the opportunity to diagnose their ungrammatical utterances. Thus, pointing out the grammatical explanation explicitly increases salience. Also, the context of the study, being Iran, suggests that L2 learners are in favor of corrective feedback types that include explanations (i.e., metalinguistic feedback), which is probably due to the fact that they receive a substantial amount of formal L2 grammar instruction (Ferris, Liu, Sinha, & Senna, 2013).

As put by Witkin, Moore, Goodenough, and Cox, (1977), “if certain cues have a history of relevance in the experience of the learner, their salience may be enhanced” (p. 26). Therefore, the explicit grammatical explanation that is relevant to the experience of EFL learners enhances salience. Therefore, it can be claimed that as the effect of cue salience (i.e., the explicit grammatical explanation) was more pronounced for the FD learners, they benefited more from metalinguistic feedback. Further, as FI learners are in contrast to their FD counterparts, they learn better when

more implicit types of corrective feedback are provided (Rassaei, 2014), whereas FD learners are more likely to benefit from more explicit types of feedback.

To conclude, the findings of this study along with the findings of prominent researchers (e.g., Daniels & Moore, 2000; Rostampour & Niroomand, 2014; Worley & Moore, 2001) may allow us to adopt a perspective on SLA that reflects that L2 learners' factors (in this case, FI/FD cognitive styles) must be carefully taken into consideration.

6. Conclusion

The results showed that both FI/FD participants' grammatical writing accuracy improved as a result of metalinguistic feedback. Though the post-hoc results did not indicate a significant difference between the FI/FD participants, the mean score of the FD participants was higher than their FI counterparts. Accordingly, it may be concluded that FD participants' gains, as a result of metalinguistic feedback, were more significant.

The findings have implications for both L2 teachers and learners: First, the findings that corrective feedback improved accuracy in new pieces of writing after the FI/FD participants received corrective feedback suggest that corrective feedback is valuable in improving L2 learners' written accuracy. Therefore, L2 teachers can help their learners improve their written accuracy by utilizing corrective feedback in writing. In particular, they should consider utilizing focused corrective feedback, as it was proved to be effective for the FI/FD participants.

Moreover, the metalinguistic feedback provided to the participants proved to be effective for the development of their grammatical accuracy. Therefore, the findings signal the importance of providing explicit explanation of grammatical rules for learners in an EFL context. Hence, the provision of written corrective feedback should be applied consistently on the targeted grammar features. However, corrective feedback types need to be matched with L2 learners' individual differences.

The findings suggest that awareness of L2 learners' cognitive styles helps L2 teachers to use more appropriate corrective feedback strategies that match their learners' learning preferences/styles. With regard to matching instruction with L2 learners' FI/FD cognitive style, this study contributes to our understanding of the extent to which explicit types of written feedback affect FI/FD participants' writing grammatical accuracy. Therefore, L2 teachers who intend to provide their learners with written corrective feedback should be aware of the potential differences between L2 learners in order to use more appropriate corrective feedback types that match L2 learners' cognitive style.

Although attempts were made to eliminate potential flaws, there were inevitably some limitations that should be taken into account while conducting further research: First, the number of participants was limited. Therefore, it is suggested to conduct future research with a larger sample size. Second, due to time limitation, the number of corrective feedback sessions provided was limited. Thus, we suggest future research take a longitudinal approach to investigate the efficacy of written corrective feedback along the moderating effects of learner factor. Due to some constraints, conducting a delayed posttest was not possible.

Moreover, the results cannot be generalized for all L2 learners in different contexts. Thus, further research should investigate the issue with larger samples, in different contexts, and different proficiency levels. The focus this study was on the uses of the English article system that may be seen as both a limitation and a strength. In adopting this focus, it was possible to measure the accuracy of a specific problematic linguistic area for the learners. Further research is needed to investigate the extent to which the findings here apply to other linguistic error categories. Further research might also find it useful to investigate whether instrument differences (e.g., different writing genre tasks) have similar or different effects on accuracy. As a conclusion, this study offers new inroads into understating differences between L2 learners and taking them into account for pedagogical decision-making.

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Appendix A

Table A1. *Test of Normality on Posttest Scores in Different Groups*

Group	Variable	Shapiro-Wilk			
		Statistic	Sig.	Statistic	Sig.
FI Metalinguistic	Posttest	.240	.144	.910	.317
FD Metalinguistic	Posttest	.208	.200*	.940	.587
Control	Posttest	.248	.159	.851	.155
FI Control	Posttest	.209	.200*	.916	.402

Table A2. *Levene's Test of Equality of Error Variances for Metalinguistic Corrective Feedback Groups*

F	df1	df2	Sig.
1.60	2	31	.217

Table A3. *Homogeneity of Regression Slope for Effect of Metalinguistic Corrective Feedback*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	720.513 ^a	5	102.930	44.789	.000
Intercept	2.800	1	2.800	1.218	.280
Group	5.975	2	1.992	.867	.471
Pretest	259.895	1	259.895	113.089	.000
Group * Pretest	18.450	2	6.150	2.676	.07
Error	59.752	26	2.298		
Total	33145.000	34			
Corrected Total	780.265	33			

Table A4. *Analysis of Covariance for Effect of Metalinguistic Corrective Feedback on Posttest Scores*

Source	Type III Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>Sig.</i>	η^2
Corrected Model	702.063 ^a	3	175.516	65.087	.000	.900
Intercept	.884	1	.884	.328	.571	.011
Pretest	314.576	1	314.576	116.656	.000	.801
Group	401.710	2	133.903	49.656	.000	.837
Error	78.202	29	2.697			
Total	33145.000	34				
Corrected Total	780.265	33				