The Differential Effects of Direct and Indirect Corrective Feedback on Impulsive and Reflective EFL Learners' Writing Accuracy

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Abstract

Given the significant role of corrective feedback and individual differences in the process of foreign language acquisition, in the present study we set out to investigate the effect of direct and indirect corrective feedback on impulsive and reflective EFL learners' writing accuracy. Sixty learners were selected and randomly assigned to three groups including two experimental groups and one control group. The first experimental group received indirect feedback, the second experimental group received direct feedback, and the control group received no feedback. The instrument employed in this study to determine the impulsivity or reflectivity of the participants was Barratt's impulsiveness scale. Writing accuracy was scored by the scale provided by Karim and Nassaji. The results revealed that both direct and indirect corrective feedbacks were effective in reducing the written errors of all the earners. Moreover, no significant difference was found between direct and indirect corrective feedbacks in terms of increasing writing accuracy. Although there was no significant difference between the impulsive and reflective learners' performance, the mean scores showed that the latter seemed to benefit more from indirect type of the feedback while their counterparts showed better performance after receiving direct feedback. The findings have implications for EFL teachers and learners.

1. Introduction

Foreign language acquisition is a multifaceted mechanism involving many interrelated elements. This challenging process requires mastery of different skills and subskills among which the writing performance seems to be more complex. Writing is one of the most central parts of communication, which demands a writer share a well-organized impression with his potential reader. If this cooperation does not happen, the text may sound illogical and hard to follow (Chandler, 2003). Likewise, it is crucial for the writer to produce a piece of writing coherently and effectively. EFL learners are expected to gain the required knowledge in order to develop this productive skill. After gaining the necessary linguistic and structural knowledge, the written performance of the leaners will need correction and revision. In general, writing proficiency is multi-dimensional in nature and it can be effectively apprehended by the concepts of accuracy, fluency, and complexity (Housen & Kuiken, 2009).

Bearing this in mind, teachers are required to deliver corrective feedback to their learners to tackle the problem of learners' errors (Farrokhi & Sattarpour, 2012). Moreover, cognitive style is an individual characteristic of human beings. There are different studies that have explored the effectiveness of corrective feedback on developing language skills, especially writing such as Hasani and Moghaddam (2012), Kang and Han (2015), Farrokhi and Sattarpour (2012), Sheen (2007). However, these studies have not considered the cognitive styles of the learners. Thus, facing the above-mentioned problem, the researchers aim to explore the impact of corrective feedback specifically direct and indirect feedbacks on impulsive and reflective EFL students' writing quality in terms of accuracy. The present study attempts to address the research gap in the literature and examines the effect of corrective feedback on impulsivity and reflectivity of Iranian EFL students in terms of accuracy.

Providing the learners with corrective feedback is an essential point in every language-learning context, however, considering the role of individual differences and the learners' capability in noticing and awareness and the ways that these may interact in the process of foreign language acquisition require extra attention. That is to say, learners need to become aware of the target language input in the form of the feedbacks given by the teacher, so they can learn more when they attend and notice the delivered feedback. Here, the role of noticing hypothesis is emphasized, which claims that in foreign language acquisition a learner will not be able to continue progressing his/her language abilities or understand linguistic structures without consciously noticing the input.

Additionally, Kim and Kim (2011) mentioned that the efficiency of corrective feedback in enhancing the learners' capabilities to progress their writing accuracy has long been discussed. It has been a hot topic for both researchers and practitioners who argue about the role of WCF in improving EFL learners' written production (Mustafa Abbas & Mohammad Tawfeeq, 2018). Moreover, many scholars considered feedback as an important contributor to "encouraging and consolidating learning" (Hyland & Hyland, 2006, p. 92). Brookhart (2017) described feedback as a central formative assessment practice which is employed in educational contexts as a "powerful" contributor to learning if it be "comprehensible" and "constructive" (p. 1).

This research may support classroom learning and skill improvement. In this sense, the study comprises an effort to comprehend individual differences in impulsivity and reflectivity and it may provide valuable data especially for teachers, teacher educators, curriculum designers and researchers, administrators, learners and educational psychologists treating EFL learners in need of assistance in similar settings. Moreover, material designers can use the findings to design more focused materials that suit the needs and requirement of their learners based on their learning styles. The study, gains significance in its attempt to help EFL learners to be aware of their needs and the factors that affect their writing performance and thus it may help them recognize their roles and relations between their learning styles reflective and impulsive styles and writing accuracy.

2. Literature Review

Chuenchaichon (2015) stated that one of the major problems contributing to students not being successful in English writing and still generates many frequent English grammar errors is related to having inadequate grammatical knowledge in the target structure. Celce-Murcia (1991) highlighted the significance of having a satisfactory level of accuracy in grammatical construction in academic writing. Skehan (1996) described accuracy as "a learners' capacity to handle whatever level of inter-language complexity she/he has currently attained" (p. 46) (i.e., how the created language and the target language are comparable). According to Housen and Kuiken (2009), accuracy can be described as descriptor for spoken and written evaluation of language along with a pointer of learners' writing proficiency; teacher can evaluate it in many ways. Various scholars (e.g., Reynolds & Kao, 2021; Shintani & Ellis, 2015; Shintani, Ellis, & Suzuki, 2014) proved the significance of using written corrective feedback in targeting some types of linguistic error and improving written accuracy.

Among different types of feedbacks, direct feedback (DF) and Indirect feedback (IDF) have been used comprehensively in several research studies. As argued by Lyster and Ranta (1997), in the former, teachers supply the correct form and clearly indicate the incorrect form by scoring through needless vocabularies, phrases, morphemes, or adding a misplaced word or phrase or morpheme. Bitchener (2008) stated that IDF (implicit feedback) identifies the situation when teachers present an error without its correct form. Teacher through underlining and circling the erroneous parts or recording the total count of the mistakes in margin or using a code to indicate the location and types of error may provide this kind of corrective feedback. The teacher does not provide an explicit correction, rather, learners should remove and correct their problems.

The effectiveness of DF and IDF on different language skills, specially writing has been investigated by numerous scholars. Among them, Eslami (2014), Lalande (1982), Shirotha (2016), and Thananchai and Padgate (2018) reported an advantage for IDF while Nusrat, Ashraf, and Narsy-Combes (2019), Rustipa (2014), Sadeghi, AbolfazliKhonbi and Gheitaranzadeh (2012), and Van Beuningen, de Jong and Kuiken (2008) revealed the effectiveness of DF. There also some studies (e.g., Nematzadeh & Siahpoosh, 2017; Robb, Ross, & Shortreed, 1986) which informed no dissimilarity concerning the two methods; besides Chandler (2003) described positive outcomes for both DF and IDF.

To date, research on feedback types have revealed interesting and somehow contradictory results, thus the inconsistency of the outcomes makes it clear that other elements such as individual differences of the learners and their proficiency level can be effective in the choice and efficiency of feedback type. As Ellis (2008) argued, the efficiency of DF and IDF can be depended on the existing mode of the students' grammatical awareness.

To our knowledge, there is scarce studies examining how individual difference may differentially affect the efficacy of a certain feedback type. For instance, Westmacott (2017) investigated the learning context and individual differences effect on the choice of feedback type. Goldstein (2006) examined the role of individual and contextual factors in the acceptance and use of written corrective feedback. Li and Li (2012) conducted a multi-case study discovering individual differences affecting students' reactions to WCF. Numerous writers (e.g., Bitchener, 2012; Polio, 2012) advocated issues for instance metacognitive knowledge of grammar, learning context, and proficiency levels might affect reactions to dissimilar kinds of feedback; the present research is one of scarce studies that have created to discover individual difference, and it can be valuable to carry on to improve this knowledge base. Generally, it can be claimed that these studies are not conclusive and they have not comprehensively considered the role and influence of individual differences of the learners. Thus, there is area for more research in this regard. Ellis (2010) argues that "The vast bulk of WCF studies have ignored learner factors, focusing instead on the relationship and the effect of specific WCF strategies and learning outcomes" (p. 339). One of the areas of research that have not been investigated fully and has lately attracted particular attention is impulsivity and reflectivity characterized as a property of cognitive systems that incorporate individuals' decision-making and their fulfillment in problem-solving situations.

Giving appropriate feedback and the reason behind learners' mistakes can be explained through Noting Hypothesis. The Noticing Hypothesis has its origins in the research where Schmidt (1983) challenges the fundamental causes behind the constant grammatical and lexical errors in the proficient language use of a Japanese learner of English, called 'Wes'. To provide a clarification to the maintenance of certain definite errors in his language production, Schmidt recommended that Wes might not have noticed the accurate form of the errors in his interlanguage. He might not have recognized that he had been using them incorrectly. Whether that was the case is not explicated in his paper, nonetheless that study is the beginning of the Noticing Hypothesis. The role of awareness in language learning has achieved power with the growing status of cognitive approaches in the field. The Noticing Hypothesis, which explains that any form must be noticed in the input and registered consciously to be acquired (Schmidt, 1990, 2001), challenges the previous prevalent approaches to language attainment that center on subconscious procedures (Krashen, 1981).

As argued by Brown (2007), impulsivity is described as the predisposition to solve difficulties rashly by making chance decisions or decisions of high risk; however, reflectivity or reflective mode is an inclination to spend more time for decision-making and discovering a solution to tackle the problems, at times to reflect on all opportunities before decision-making. Language learners are differentiated from other learners by the way of collecting, organizing, and processing of the information that they employ for solving the problems and making a

decision. In other words, different individuals preferentially apply different adaptive systems to cope with different skills and sub skills of language effectively to foster their interlanguage enhancement.

The effect of different feedbacks has been studied by different scholars in improving writing and speaking performances, however, they are mostly inconclusive and we need more research to cover different dimensions of language learning including individual differences. Facing the above-mentioned problem, the researchers set out to explore the influence of corrective feedback specifically DF and IDF on impulsive and reflective EFL students' accuracy level of writing. Based on the above-mentioned points, the succeeding research questions are formulated in order to be explored in this study:

RQ1: What are the differential effects of direct and indirect written corrective feedback on written production of Iranian EFL learners?

RQ2: Are there any significant differences between impulsive and reflective learners' written productions in response to direct and indirect correct feedback?

3. Method

3.1 Participants

The original population comprised 110 EFL learners at seven intact classes, both males and females, studying at a private language school, who were placed at low-intermediate proficiency level in accordance with the institute's criteria. In this study, 85 learners with scores in low-intermediate band were selected as real low-intermediate learners after taking the Preliminary English Test (PET). Later, 60 EFL learners were chosen as the main sample group of the current study based on their performance on the impulsiveness questionnaire. These participants were senior high school and university students, and they were between 14 and 30 years of age. After that, they were randomly put into three groups, including two experimental groups and one control group. Each group contained 20 participants (10 impulsive and 10 reflective participants). In other words, there were three reflective and three impulsive groups in total, and considering the sample size, the number of impulsive participants equaled that of reflective participants in each group.

3.2 Instruments

The first instrument given to the participants of the current study, prior to initiation of the study was PET published by Cambridge University Press consisting of four major sections of reading, writing, listening and speaking. However, in view of the research goal which was essentially focused on writing and for time considerations, only the reading and writing sections were fixed on in this study. The reading section included 35 items, and the writing section consisted of two parts, the first contained five questions while the second part included tests that were related to writing. It took 75 minutes for the participants to finish the test. The placement test had 60 points in total, including a 35-point reading section and a 25-point writing section. The responses were scored according to the scoring rubric given in the test, the test takers were placed at different proficiency levels according to the score range presented in terms of the Association of Language Testers in Europe Framework and the Council of Europe's 'Common European Framework of reference' (CEFR),. These proficiency level bands

range from level 1 (A1= breakthrough) to level 5 (C2 = mastery), and A2 is considered as pre-intermediate level.

3.2.1 Reflectivity/Impulsivity Questionnaire

Another instrument we employed was BIS (Patton, Stanford, &Barratt, 1995), a widely used questionnaire to distinguish the impulsive participants from the reflective ones. BIS is a 4-point 30-item questionnaire classified into attentional, motor, and planning facets.

In this questionnaire, the following questions need to be reversed 2, 4, 19, 20, 21, 22, 23, 24, 26, 27, and 30. The participants had four options to select from (1, 2, 3, 4); the participants who selected option one in normal questions and four in reverse questions, gained the score of 30, which meant they were the most reflective ones, and the participants who selected number four in all normal questions and number one in reverse questions, gained a score of 120 meaning that those were the most impulsive participants Therefore, the participants whose scores were above the average (M=75)were considered as impulsive and those whose scores were below 75 were considered as reflective.

Barratt's impulsiveness questionnaire was reviewed by two experienced university teachers to decide whether it needed to be refined before employing it in the main study and also to determine the amount of time needed to complete the questionnaire. Then it was translated into Farsi to make sure that participants understood the items of the questionnaire clearly. Later, the verified and translated, its piloting was done on a sample of 30 EFL participants in order to assure its reliability. That is to say, the validity of the questionnaire was ensured through content validity, Cronbach's alpha coefficient of 0.79 (α>0.5) indicated a relatively high level of reliability.

3.3 Procedure

Alongside the institute criteria for the placement of the participants, to be on the safe side, we also conducted a standardized test entitled PET at the onset of study to ascertain the homogeneity of participants. Thus, out of a total number of 110 participants, 85, who comprised the final sample of the study, were assigned to low-intermediate band (A2), considering their PET scores.

In the next stage, the participants were asked to fill out the BIS questionnaire, which was employed to group the learners into reflective and impulsive categories. In this study, 35 learners were categorized as impulsive and 55 reflective. To have equal number of participants in both categories, a total of 60 learners (30 reflective and 30 impulsive) were selected randomly for the study. However, at the end of the experiment, only the data obtained only from 52 participants was applied for the purpose of analysis because eight participants had dropped out of the study.

To be consistent, the teachers of the selected intact classes were trained to follow all sages of data collection in an identical manner throughout the term. However, the provision of feedback and scoring the pre- and post-tests were considered the researchers' responsibilities.

The participants were randomly assigned into three groups, which differed from each other in terms of feedback types they received; the first experimental group received indirect

corrective feedback, the second experimental group received direct corrective feedback, and the third group or the control group received no feedback.

Initially, an essay writing task was given as the pretest, which had to include 150-200 words to be completed in 40 minutes; the topic assigned was "The advantages and disadvantages of the living in big cities".

In the course of treatment sessions, following the completion of each unit from the text book, an essay writing task topically related to the unit was assigned. The assigned topics were as follows;

1. "Do you agree or disagree the university should make participants ready for their future jobs?"
2. "Are Individuals as responsible as governments for their environmental issues in our world?"
3. "Which would you prefer? Working for a company or opening your own business?"

After each writing task was completed, the essays were collected and handed over to the researchers, who provided group-specific feedbacks, and returned the essays to the participants the following session. The feedbacks targeted the following grammatical points;

1) Passive/active voices
2) Regular and irregular past tense
3) Third person(s)
4) Articles
5) Plural (s)

In the final session of data collection, the topic "The advantages and disadvantages of modern technology" was assigned as the posttest to be completed under the same conditions as the pretest. Two independent raters, namely two of the researchers, scored the essays collected in the pretest and the post-test.

To sum up, the participants wrote five writing tasks, one in pre-test, three during the treatment, and one as the post-test. There were only 15 instructional sessions scheduled for the treatment because the second and the eighteenth sessions were allotted to pre-test and post-test, respectively.

3.4 Scoring Procedure

Writing accuracy of every text produced by the participants was scored by the scale provided by Karim and Nassaji (2018). Regarding preceding research (e.g., Chandler, 2003; Shintani et al., 2014; Shang, 2019), the current study employed an error ratio to gauge the overall accuracy of each writing performance. That is to say, the total count of incorrect forms related to each of the mentioned grammatical categories is divided by the total count of words written in each text and subsequently multiplied by 100. Thus, a ratio was used to consider the dissimilarities in the length of each script. This process was followed for each of the examined linguistic components in pre-test and later they were compared with the calculations in the posttest. To ensure the inter-rater reliability, 30% of the essays were randomly selected to be scored by both researchers. The comparison of the scores from the two score sets yielded pretty strong correlations which are provided in detail below at Table 1.

Table 1. *Results for the Inter-rater Reliability*

			Writing Scores of 2nd rater
Scores of 1st rater	Article	Pearson Correlation	.82
		Sig. (2-rated)	.02
		N	36
	Regular Past	Pearson Correlation	.98
		Sig. (2-rated)	.00
		N	36
	Irregular Past	Pearson Correlation	.90
		Sig. (2-rated)	.01
		N	36
	Active voice	Pearson Correlation	.99
		Sig. (2-rated)	.00
		N	36
	Passive voice	Pearson Correlation	.76
		Sig. (2-rated)	.04
		N	36
	Plural	Pearson Correlation	.78
		Sig. (2-rated)	.04
		N	36
	Third tense	Pearson Correlation	.91
		Sig. (2-rated)	.01
		N	36
	Writing score	Pearson Correlation	.94
		Sig. (2-rated)	.02
		N	36

4. Results

First, for gaining a general idea about the participants' performance, descriptive statistics for all groups in both the pre-test and posttest are presented in Table 2.

Table 2. *Descriptive Statistic for the Pre-test and Posttest of All Groups*

Personality Type	Group		N	Mean	Std. Deviation
Impulsive	indirect feedback	Pretest	10	2.75	.88
		Posttest	10	3.07	2.05
	direct feedback	Pretest	10	2.11	1.16
		Posttest	10	4.97	2.24
	control	Pretest	5	5.32	1.50
		Posttest	5	6.18	1.40
Reflective	indirect feedback	Pretest	9	2.02	1.00
		Posttest	9	5.02	1.93
	direct feedback	Pretest	9	2.79	1.71
		Posttest	9	3.22	1.92
	control	Pretest	9	4.83	1.74
		Posttest	9	4.36	3.51

The data were checked for the underlying assumption of parametric tests. The results of Kolmogorov-Smirnov test of normality showed that both the pre-test scores, D (52) = .09, *p* = .20, and posttest scores, D (52) = .11, *p* = .16 were normally distributed. Moreover, Levene's test of equality of variances (Table 3) revealed that the variances were homogeneous across all groups in both the pre-test and the posttest.

Table 3. *Levene's Test of Equality of Error Variances for Pre-test and Posttest*

	F	df1	df2	Sig.
Pretest	1.44	5	46	.23
Posttest	.61	5	46	.70

Since the underlying assumptions of parametric tests were satisfied, two repeated measures *t* tests were employed. The results, displayed in Table 4, indicate a significant difference between the pre-tests and posttests of the experimental groups. In other words, both direct and indirect written corrective feedback had a significantly positive impact on the accuracy level of Iranian EFL students' written production (research questions one and two).

Table 4. *The Results of Paired Samples t Tests for IDF and DF Groups*

Feedback type	T	df	Sig. (2-tailed)	95% Confidence Interval of the Difference	
				Lower	Upper
Indirect feedback	-2.81	18	.01	-2.78	-.40
Direct feedback	-2.81	8	.01	-3.00	-.43

In response to the third research question, first, the performances of the groups in the pre-test were comapred. A two-way ANOVA conducted on the pre-test data displayed a significant difference between the performance of the IDF, DF, and control groups, F (2, 46) = 18.77, p < .001. Hence, to compare posttest scores of the groups taking pre-existing differences into account, a two-way ANCOVA was conducted and performance of the participants before the treatment was considered as covariate. Table 5 shows the results.

Table 5. *Results of Two-way ANCOVA on Posttest Scores*

Source	Type II Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Personality type	1.43	1	1.43	.29	.60	.05
Feedback type	.19	2	.09	.02	1	.00
Personality type * feedback type	51.58	2	25.79	5.2	.01	.19

a. R Squared = ,252 (Adjusted R Squared = ,152)

As illustrated in Table 5, after adjusting for pre-treatment differences in writing performance, neither personality type nor feedback type per se had a significant effect on the accuracy of written production of the learners. The interaction effect of personality type and feedback type, however, was significant and accounted for 19 percent of the variance in posttest

scores, which is a strong effect size. In other words, the effect of feedback type on accuracy of writing depends on whether the participants are reflective or impulsive. Impulsive learners produced more accurate pieces of writing when they received direct than indirect written corrective feedback. Conversely, reflective learners' written productions were more accurate when they received indirect written corrective feedback.

5. Discussion

This study revealed that direct corrective feedback significantly contributed to diminishing the written errors of both impulsive and reflective EFL students as the DF group performed significantly better than the control group (no feedback). Direct corrective feedback, involving the provision of correct target forms, is assumed to play an important role in EFL context (Nusrat, Ashraf & Narsy-Combes, 2019; Rustipa,2014; Sadeghi, AbolfazliKhonbi & Gheitaranzadeh, 2013; Van Beuningen, de Jong & Kuiken, 2008). It is recommended that direct corrective feedback be continuously delivered to adult language learners to hinder fossilization and help evolution of linguistic competence (Ferris, 2004; Lyster & Ranta, 1997). Explicitness or directness considerably affects EFL learners' learning and recognizing their errors.

Indirect corrective feedback was also found to be effective in reducing the written errors of both impulsive and reflective EFL learners. Eslami (2014), Lalande (1982), Shirotha (2016), and Thananchai and Padgate (2018) found similar results and reported an advantage for IDF. However, one has to acknowledge the caveat that IDF may motivate leraners to self-edit (Lalande, 1982) while lower proficiency students may be incapable to recognize and repair mistakes even when the mistakes are obvious.

Research on foreign language acquisition confirms our finding that IDF is often preferred to DF (Ferris, 2001). The reason is that IDF involves learners in the correction process and aids them reflect on it, (Ferris, 2001) which might support learners improve their long-term achievement of the foreign language and lead them to engage in "guided learning and problem-solving" in fixing their mistakes. Furthermore, numerous specialists approve that IDF has the highest capability for assisting learners in increasing their foreign language proficiency and metalinguistic awareness and is preferable than DF in learners' improvement over a long run (Ferris, 2004).

Unlike this study, Baleghizadeh and Dadashi (2011) reported IDF to be a more effective device than DF in repairing learners' spelling errors. In addition, Thananchai and Padgate (2018) exposed that although the students in both DF and IDF groups improved significantly, the posttest scores of the indirect group outweighed that of the direct group. This suggested the higher efficacy of indirect corrective feedback in improving grammatical accuracy.

Commonly, the outcomes of this paper are in congruence with the results of Hosseiny (2014) who asserted a significant dissimilarity between the experimental groups for whom the corrective feedback was delivered and the control group with no feedback. Their outcomes exposed the advantage of DF group over the control group. However, none of the experimental groups (DF and IDF) was superior to another.

Considering reflectivity and impulsivity of the learners, it can be claimed that IDF showed a noticeable reduction of writing errors among reflective learners and DF exposed greater

reduction of errors among impulsive learners. This can be explained by considering the definition of Kagan (1965), who regarded reflectivity as a tendency to collect and assess the information prior to making a decision. IDF gives time to the learners to reflect on their errors and eventually find the correct form. This can be best accomplished among reflective learners who have the potential of thinking before acting. On the other hand, as defined by Brown (2007) impulsive learners have the inclination to resolve the problems hastily and irregularly by risk-taking or guessing. Providing these learners with DF can decrease their risk-taking style and prevent them from guessing the correct forms without thinking.

6. Conclusion

Founded on the obtained consequences it can be argued that varied types of feedback showed similar impacts on the EFL students. In this regard, Ellis (2009) believed that teachers should use techniques and materials that various learners can use with different learning styles. The current research exposed that both direct and indirect corrective feedback types have their own influence on written accuracy of the learners, and that there seemed to exist an interaction effect between feedback type and personality type. In other words, reflective learners showed better performance receiving IDF while the impulsive ones seemed to benefit more from DF. Thus, individual differences are a significant factor to consider if one is to provide the right feedback for the right learner as learners of different personality type may benefit most from the feedback that best suits their personality.

Generally, based on the obtained findings, following the treatment, the experimental groups displayed similar performances; thus, DF and IDF had their own impacts on   enhancing the learners' accurate performance. The findings of this study exposed that written corrective feedback significantly influenced Iranian pre-intermediate EFL students' writing accuracy in the posttest. Thus, teachers should feel confident that providing feedback of both direct and indirect types serves well to guide learners and inform them about their problematic linguistic area, which can ultimately improve their performance. Additionally, while provide feedback for the learners, it is similarly vital to offer them the kind of feedback that matches their personality type. The treatment of this study was conducted during 15 sessions; however, by increasing the treatment duration different results may be obtained. Moreover, this study was an effort to realize how feedback types affect language learners' personality-learning styles, i.e., impulsivity and reflectivity. It was found that DF and IDF left similar effects on these learners.

Every study faces some limitations and due to lack of facilities, the researcher might find him/herself limited in some ways, and the present study is no exception. The researchers encountered the following limitations in conducting the study. First, they could not change the textbook used by the learners, so the topics for essays had to be selected based on the topics mentioned in the textbook. Second, the institute's rules did not allow the researcher to obtain writing samples of the learners in the classroom and the learners were asked to prepare essays at home. The other limitation had to do with small sample size and limited treatment session. The study population was moderately small, and future investigations with a bigger sample might offer diverse consequences for the identical research questions. Hence, additional studies with a larger sample size are required to examine more convincingly the contribution of written corrective feedback to students' grammatical accuracy level.

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Appendix A: Barratt Impulsive Scale

Appendix B: Barratt Impulsiveness Scale (Revised)

ntroduction: People differ in ways they act and think under various situations. Ernest Barratt developed the Barratt Impulsiveness Scale Test in 1995 to measure a person's level of impulsiveness.[1] This is a revised test incorporating my comments to help you identify and be aware of ways in which you react and think as an investor.

Directions: Read each statement and circle the appropriate number on the right side of this page. Do not spend too much time on any statement. Answer quickly and honestly. Refer to Table B.1.

Scores
1 *Rarely/Never*
2 *Occasionally*
3 *Often*
4 *Almost Always/Always*

Scoring system: Before adding up your scores in each section, reverse the scores of reverse questions; for example, if your score on a reverse score question was 4, then reverse it to 1.

Then add up all your scores for the section.

Table B.1   Revised Barratt Impulsiveness Scale 1

Attentional Facet	Scores
I.	1 2 3 4
1. I don't "pay attention."	1 2 3 4
2. I concentrate easily.	1 2 3 4
3. I "squirm" at plays or lectures.	1 2 3 4
4. I am a steady thinker.	1 2 3 4
5. I am restless at the theater or lectures.	1 2 3 4
	(Continued)

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Table B.1   (*Continued*)

II.	1 2 3 4
6. I have "racing" thoughts.	1 2 3 4
7. I change hobbies.	
8. I often have extraneous thoughts when thinking.	

Reverse score questions are: *2* and *4*

Your scores for Attentional Facet I: _____

Your scores for Attentional Facet II: _____

Comment: if your scores were low on both then you have a good attention span and cognitive stability, the qualities of nonimpulsivity.

Motor Facet

I.	
9. I do things without thinking.	1 2 3 4
10. I make up my mind quickly.	1 2 3 4
11. I am happy-go-lucky.	1 2 3 4
12. I "act" on impulse.	1 2 3 4
13. I act on the spur of the moment.	1 2 3 4
14. I buy things on impulse.	1 2 3 4
15. I spend or charge more than I earn.	1 2 3 4
II.	1 2 3 4
16. I change jobs.	1 2 3 4
17. I change residences.	1 2 3 4
18. I can think only about one thing at a time.	1 2 3 4
19. I am future oriented.	1 2 3 4

Reverse score question is *19*

Your score for Motor Facet I: _____

Your score for Motor Facet II: _____

Comment: If you scored low on both, then you have good control of your motor actions and persevere in holding off on impulsive actions.

The answer to question 10 needs to be qualified. My assessment differs from the standard low score for nonimpulsivity. I accept a higher score for this question because I believe that an investor's ability to make up his or her mind quickly with a quality decision is a positive factor. The ability to make a quick and yet not impulsive decision is the skill of an excellent instinctual investor. I see a mid to high score in this question as positive.

Planning Facet

I.	
20. I plan tasks carefully.	
21. I plan trips well ahead of time.	1 2 3 4
22. I am self-controlled.	1 2 3 4
23. I am a careful thinker.	1 2 3 4
24. I plan for job security.	1 2 3 4
25. I say things without thinking.	1 2 3 4
II.	1 2 3 4
26. I save regularly.	1 2 3 4
27. I like to think about complex problems.	1 2 3 4
28. I am easily bored when solving thought problems.	1 2 3 4
29. I am more interested in the present than in the future.	1 2 3 4
30. I like puzzles.	

Reverse score questions are:

20, 21, 22, 23, 24, 26, 27, and *30*

Table B.1   (*Continued*)

Your score for Planning Facet I: _____
Your score for Planning Facet II: _____
Comment: If you scored low on both, then you have good self-control in planning for your future and possess the cognitive ability for complexity, the reverse of an impulsive attitude.

With question 29, my assessment differs from the standard score. I accept a higher score for nonimpulsivity. While one's attitude of planning for the future is a sign of nonimpulsivity, for an investor, the ability to *focus on the present decision* and not be distracted by the prospects of future profits or an out-of-proportion fear of past or future losses is an asset. A higher score for those reasons is acceptable for this question and does not detract from being nonimpulsive.

Source: http://www.impulsivity.org/pdf/BIS11English.pdf, with author's revision incorporated in the scale.

Note

1. J. H. Patton, M. S. Stanford, and E. S. Barratt, "Factor structure of the Barratt Impulsiveness Scale," *Journal of Clinical Psychology* 51 (1995): 768–774.

Appendix B: Sample of Writing

«Saeed Taginasab»   «in the name of god»

Direct feedback

nawaday, most of the young people try to go to ~~the~~ university after Their high school. there are many different majors in ~~the~~ university That students can choose them to study and actually. this days the university is considered as a bridge to people's dream jobs and it's expected that university should prepare students for their future ~~goals~~ jobs

A university presents educated people who have special skills to do a special job to ~~the~~ society. university after educating people ~~give~~ gives them a degree that is a proof for people to have a proffession but the degree is not all ~~the~~ things that we need. university education ~~prepare~~ prepares students for a profession from its basically parts to all ~~the~~ things and skills that they have to have for that.

The problem is that sometimes university can't give the students all ~~the~~ things they need to get their future ~~job~~ jobs because of the societies ~~condition~~ conditions and sometimes they learn lots of things that they just exist on papers. so just studying at ~~the~~ university is not enough for ~~the~~ people because studying something and doing it ~~is~~ are completely different.

in my opinion, ~~the~~ future of The world won't be about degrees, it will be about skills. we have lots of educated people who are not really skilled so we have to learn what should we do by studying them well and try to experience them. also universities should consider the societies' ~~condition~~ conditions then try to prepare them for their future ~~job~~ jobs.