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# Comparison of the effects of Written Corrective Feedback and Task-complexity Manipulation on the Grammatical Accuracy of EFL Learners' Writing

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## Abstract

**This study compared the effects of teacher-provided written corrective feedback and manipulation of resource-directing dimensions of task cognitive-complexity along +/- Here and Now condition on the grammatical accuracy of Iranian EFL learners' writing products. There were 45 participants in the study who were randomly assigned to three experimental groups. All the participants were first given a prompt for the pre-test of writing, and then each group received its own intervention (direct written corrective feedback, indirect written corrective feedback, and task manipulation) for four sessions during four weeks. Subsequently, all the groups took the pre-test prompt of writing for their post-test performance after which the data were collected for the statistical analyses and fed into SPSS. The findings of the study confirmed the significant effects of direct written corrective feedback on increasing the grammatical accuracy of learners' writings. There were implications, then, based on the results, highlighting the role of meaningful context of task application in the classroom.**

*Keywords:* Written corrective feedback, Task manipulation, Grammatical accuracy, Direct feedback, Indirect feedback

The writing skill is, now, valued as a crucial aspect of measuring language proficiency; therefore, the importance of developing second

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language writing skill for communication, educational and occupational purposes is not anymore a hidden facet of second language instruction (Dawn Sia & Cheung, 2017; Muller, Gregoric, & Rowland, 2017). Teachers and students, as well as writing instruction researchers, seek efficient and practicable ways of improving this complex and multidimensional skill (Gunawardena, 2014; Hyland, 2013) and for a long time the issue of correcting learners' written products coupled with written corrective feedback (WCF) which is defined as explicit or implicit written responses to the ungrammatical or inappropriate written output of the students has been under debate and intensive investigation (Truscott, 1996; Long, 1996; Gass, 1997).

Regarding the role that is considered for WCF as a means of improving second language acquisition in general (Bitchener, 2012; Ellis, R., Erlam, R. & Loewen, S., 2006; Ferris, 2010) and the writing skill in particular (Hartshorn, et al., 2010; Horbacauskiene & Kasperaviciene, 2015; Hyland & Hyland, 2006), one expects a satisfying line of research that incorporates affirmative results of applying WCF in writing classrooms. Although its benefits are not totally ignored, the effectiveness lags behind expectations (Han & Hyland, 2015; Lee, 2008). As Truscott put it in 1996, WCF provided by teachers can only marginally shed lights on explicit knowledge of the errors and immediate linguistic correction; it seems unable to equip the learners with the required knowledge to avoid those errors in future and to acquire actual practice of using correct alternatives in their written products.

A myriad of studies also investigated L2 learners' preferences and attitudes towards receiving WCF (Chandler, 2003; Chen, Nassaji, & Liu, 2016; Ferris, 1995; Hyland, 1998; Poulos & Mahony, 2008; Sheen & Ellis, 2011). Though the general theme reveals learners' tendency for improving the grammatical accuracy, students' standpoint towards the effectiveness of WCF as a functional tool for enhancing the quality of writing has remained controversial (Elwood & Bode, 2014; Loewen et al, 2009). Therefore, it seemed reasonable to reconsider the role of WCF in improving the writing skill within L2 language context. As a matter of fact,

providing meaningful opportunities for effective writing practices and learning rather than providing patterned grammatical feedback is what needs to remain a priority. With writing defined as a cognitively complex and multilayer, multifaceted process of transferring ideas into a coherently and accurately developed text, the credibility of one-size-fits-all strategies of grammatical improvement can judiciously be undermined (Bereiter & Scardamalia, 1987; Flower & Hayes, 1980, 1981, Galbraith, 1999). The assumption is that the static method of providing WCF can barely deliver a response to the inherent complexity of writing process, also to the diversity of situations and purposes that FL and/or SL learners have to deal with (Norris & Manchon, 2012). Instead, authentic and flexible occasions of writing instruction and writing task performance should be replaced through which the complexity and dynamicity of writing, its primary position and the uniqueness of given situations could be acknowledged. As such, task complexity manipulation is hypothesized to be a viable option for improving writing task accuracy and enhancing the opportunities of general writing proficiency.

## Literature Review

### Theoretical Background

Task-based language teaching (TBLT) lends significant support to authentic language teaching and classroom activities. Indeed, authenticity is one of its axiomatic and vital tenets through which students can establish meaningful connections between what they learn in the classroom and what they need in their real-life (Nunan, 2004). This meaningful correlation which is explicitly or implicitly recognizable by students can enhance the quality of learning. (Long, 1991) As Robinson (2003) puts it, “tasks should be developed and sequenced to increasingly approximate the demands of real-world target tasks, with the goal of enabling second language users to succeed in attaining needed lifetime performance objectives” (p. 46). Further, Robinson (2001a) proposed the possibility of manipulating the cognitive complexity of a task in order to make its performance meaningful and accessible: “task complexity…is the result of

the attentional, memory, reasoning and other information processing demands imposed by the structure of the task on the language learner" (p.29). That is, the right choice of task and type of task manipulation would weaken the burden imposed on the mental and attentional resources of the learners. As such, the general quality of the final product increases, and new opportunities for effective instruction and learning appear.

Clearly explaining how to manipulate the cognitive complexity of task performance appropriately, Robinson (2001a) defines three factors which he believed to play crucial roles in differentiating the cognitive demands of the tasks: 1. intrinsic complexity (cognitive factors, i.e. single-task vs. dual-task, single outcome vs. multiple outcomes, etc.), 2. learners' perception of task complexity (learner factors, i.e. depends on the level of proficiency and ability which the learners bring to the context of task performance and is related to such factors as anxiety, intelligence, etc.), and 3. task conditions (interactional factors, i.e. kinds of participants' groupings, the amount of information available for the learners, whether it is one-way or two-way task). These components together formed the Triadic Componential Framework (Robinson, 2001b).

The Triadic Componential Framework presupposes an unlimited capacity of attentional and memory resources thus, an increase in cognitive loads and demands of a task would change the direction of access to these resources and cause different effects on the production. Robinson illustrates the access to these resources under the two dimensions of *resource-directing* and *resource-dispersing* task-complexity manipulations. The resource directing dimension navigates the attentional and memory resources towards the conceptual, functional and linguistic requirements of a task and the way they are reflected in the task performance which, thus, can be manipulated along three factors. 1. +/- here and now (attending to the 'temporality of reference' and 'deictic expressions' and choosing the appropriate structures), 2. +/- reasoning demands (finding the appropriate and logical structures which state the kind of complex or simple reasoning behind the syntactical and conceptual expressions), and 3. +/- few elements (to move along an elemental

complex issue and find the relations or a simple clear-stating one). Robinson predicts that by manipulating resource-directing dimensions of task complexity, accuracy and complexity of a task would increase.

On the other hand, if increasing the fluency of task completion is desired, task cognitive demands can be manipulated in a way to *disperse* the attentional resources from learners' linguistic repertoire, and bring a real-life taste of action to the task, hence the resource-dispersing dimension. The factors included in resource-dispersing dimension are 1. +/- planning time (requirement to plan in order to reach the end), 2. +/- single task (whether one task at a time or two or more simultaneously), and 3. +/- prior knowledge (requirement to activate background knowledge to accomplish the task). Therefore, manipulation of task complexity along each of these factors is expected to exert influence on the learners' cognitive state and change the quality of the final product (Robinson, 2001a, 2001b). That is why its potentials for becoming a practical substitute for static instructional procedures of providing WCF worth measuring and investigation.

## Empirical Background

**Studies on WCF.** The doubt raised by Truscott's skepticism (1996) about the general usefulness of WCF paved the way for the researchers to enter new lines of research and reconsider the efficiency of applying WCF in classrooms. Different types of WCF, e.g., direct vs. indirect, metalinguistic, metalinguistic plus revision, explicit vs. implicit, reformulation, and electronic (Li & Roshan, 2019; Muller & Gregoric, 2017) and different ways of employing them in classroom (teacher correction, peer-correction, collaborative revision, individual revision) were explored in order to find out the most appropriate and applicable ones (Chandler, 2003; Ellis, 2009; Kim & Emeliyanova, 2019; Westmacott, 2017). For example, Daneshvar and Rahimi (2013), investigated the effects of direct focused WCF and recast WCF on the grammatical accuracy of 90 intermediate female Iranian students. The results showed that the grammatical accuracy of students' writings in the recast group was

significantly higher than the students in the direct focused group and the control group. Eslami's research study (2014) on 60 Iranian low-intermediate students also proved that the influence of indirect WCF was significantly higher than the effects of direct WCF on the learners' writing accuracy. However, a later investigation (Farjadnasab & Khodashenas, 2017), illustrated that direct WCF can have greater influence on the grammatical accuracy of the learners' writing performance.

In a recent study, Said and El Mouzrati (2018) sought the effects of WCF as a formative assessment tool on students' written products. To this end, they analyzed the documents gathered from 30 students, combined with a follow-up interview with 110 teachers in order to investigate their beliefs and procedures with regard to providing WCF. The results of this study were indicative of a prevailing mismatch between the teachers' beliefs concerning the WCF as a formative tool and the actual final findings. According to their detailed report, teachers' overuse of WCF for every bit of linguistic errors led to students' frustration and demotivation. Although 87% of teachers in this study vote for the effectiveness of WCF as an assessment tool *for* learning rather than an assessment tool *of* learning, the results didn't match the expectations. However, at great odds, Saeli (2019), studied the teachers' and students' preferences of giving and receiving WCF in Iran and found that there is a positive correlation between teachers' perception of what the students need as WCF and what actually the students report as their preference. These studies provided enlightening results though they could not reconcile the controversy over the usefulness of WCF (Tan & Manochphinyo, 2017).

**Studies on task-complexity manipulation.** In a plurality of studies, manipulation of task cognitive complexity has been the issue of investigation (Ellis & Yuan, 2004; Ong, 2014; Ong & Zhang, 2010, 2013). In one study, Ruiz-Funes (2015) highlighted the role of task cognitive manipulation in improving writing quality and demonstrated that it has a more crucial effect on the quality of the final written product of the learners when compared to the effects of level of proficiency. This is in line with the findings of Abdollahzadeh and Fard Kashani (2011) who conducted

research in Iran and examined the effects of task-complexity manipulation along resource-directing dimensions (+/- Here and Now) on the quality of writing. According to the findings of their study, manipulation of task complexity seems to positively affect the performances of both groups of proficient and non-proficient language learners in rather the same way. Ishikawa (2006) also investigated the effects of manipulating task complexity through +/- Here and Now dimension on the written narrative texts of 54 Japanese L2 students and found that task manipulation has significant effects on the improvement of writing quality, including accuracy, complexity, and fluency of the text.

Regarding the effects of task manipulation on the accuracy of written task performance, Daneshkhah and Alibabaee (2017) examined the role of resource-directing and resource-dispersing dimensions in developing the accuracy and lexical complexity of 50 EFL learners' argumentative writing tasks and found that manipulating task cognitive-complexity along resource-dispersing dimension causes an increase in the accuracy of the written product while task manipulation along resource-directing dimensions increases the quality of lexical complexity. The results were in congruence with the findings of Fakhraee Faruji and Ghaemi (2017) who found that manipulation of task sequence from simple to complex can positively increase the accuracy of the learners' written productions. Yahyazadeh Jelodar and Farvardin (2019) also investigated the effects of collaborative meaning-focused and grammar-focused pre-writing tasks as the navigators of resource-dispersing and resource-directing dimensions on the accuracy, complexity, and fluency of 113 Iranian students' writing samples. The findings pointed that meaning-focused pre-writing tasks (manipulation along resource-dispersing dimension) increased the fluency of writing performance and that the grammar-focused pre-writing task (manipulation along resource-directing dimension) gained favor with the writing accuracy.

Though the intention is not to ignore the inconsistencies of the research findings within the literature of task cognitive-complexity manipulation, the potentials of task manipulation as an alternative to WCF

for increasing the accuracy of writing needs to be brought to the fore. It is implied from the vast number of studies on the manipulation of task cognitive-complexity that by manipulating task cognitive complexity and task condition, the learners can enhance the writing quality. With a specific focus on the issue of task sequencing and design, task manipulation, and the required balance between the learners' cognitive state and task cognitive load then, one can question the usefulness of providing WCF. Hence, the present study attempts to provide appropriate and meaningful conditions that can help pave the way for increasing the accuracy of writing task performance.

**The Present Study**

Not to derail the train of thought, it is insightful to remember that the present study accentuates the necessity of dynamicity and meaningfulness in applying classroom procedures towards reaching the instructional goals. Therefore, task-complexity manipulation was proposed as a viable alternative to WCF for increasing the quality of writing and achieving learning objectives. In this sense, the present investigation aimed to compare the effects of providing WCF with the effects of task-complexity manipulation on the grammatical accuracy of Iranian EFL learners' writing tasks. With this in mind, task complexity is manipulated along with the resource-directing variable of +/- Here and Now and WCF is provided both directly and indirectly. Accordingly, the following questions are sought to be answered:

1. Does manipulation of task cognitive-complexity improve the grammatical accuracy of the writing samples better than WCF?
2. What are the effects of manipulation of task cognitive-complexity on the grammatical accuracy of the writing task?

## Method

**Participants**

The participants of this study were recruited from the population of intermediate EFL learners of Nakhl English Institute in Ahvaz, Iran, whose

level of language proficiency was examined based on the placement rules and policy of the institute. Initially, there were 36 female and 21 male learners with the age range of 18 to 35 years. They were randomly assigned to the three experimental groups of the study with 19 participants in each. The three experimental groups in this study were: 1. Direct Written Corrective Feedback or DWCF Group, 2. Indirect Written Corrective Feedback or IWCF Group, and 3. Task-complexity Manipulation or TM Group. All the participants' L1 was Persian and they had been taught the preliminaries of paragraph writing as was reported by their teachers. In order to avoid any probable confusion of class and treatment, a different schedule was prepared for treatment purposes which caused some amounts of attrition effect among all the three groups. In addition, some of the participants proved to be below the required level of proficiency after the data analysis, which caused an inconsiderable decline in the number of the final workable data. Therefore, the final sample data were collected from 45 participants with 15 members in each group. All the treatment procedures were conducted by the researchers of the study in all three groups.

## Instruments

**Pre-test, Post-test of Writing.** To evaluate the effects of the task manipulation and WCF on the grammatical accuracy of the writing task performance of the learners, all the participants were given one same writing prompt once before the treatment process begins and once after that and were asked to write an essay of at least three paragraphs. The time interval between the pre- and post-tests was four weeks and the students had about 40 minutes for each writing task. These two writing samples (pre-test of writing and post-test of writing) provided the researchers with the required data from the participants' writing performance for comparison purposes of the study.

**Writing Tasks.** The participants were required to write six narrative writings of at least three paragraphs. The writing task prompts of this study were selected from Chapter 3 (Narrative Writing Prompts) of the book

"*501 Writing Prompts*" published by Learning Express, LLC., (2003). This book was chosen mainly because it was classified based on the genre and could assure the researchers that all the provided prompts were identifiable within the same genre, therefore, inappropriate topic selection would not threaten the validity of the study. Moreover, each chapter of this book lends a section to sample responses to the writing prompts which helped the researchers clarify the requirements of the writing tasks for the participants. The following prompts were applied during the treatment process for the pre-test of writing, treatment sessions one to four, and the final post-test, respectively:

1. Some of our richest experiences take place when we travel. Tell about a memorable experience you had when you were traveling (pre-test of writing).
2. We all need help from others from time to time. Tell about a time you helped someone in need (treatment session one).
3. Describe a time when you enjoyed something you thought you would not like (treatment session two).
4. We are tested in many ways throughout our lives. Tell about a time when you were tested (treatment session three).
5. For many of us, sports are a big part of our lives. Describe a memorable sporting event (treatment session four).
6. Some of our richest experiences take place when we travel. Tell about a memorable experience you had when you were traveling (post-test of writing).

The criteria for selecting the abovementioned topics were multifaceted. First, in order to avoid the knowledge effect, it was attempted to avoid topics like "One of Robert Frost's most famous poems tells about a man who takes the road less traveled. Tell about a time when you also chose the less-traveled path" which seems to impose further literary knowledge. Second, topics that could tap into the participants' personal private life like "Some of our most difficult experiences are when we find ourselves stuck in a moral dilemma. Describe a time when this happened

to you" were not of interest mainly because they could cause possible face-threatening effects. Finally, the wordings of the prompts were of importance; the topics with difficult wordings and vocabulary which could make the retrieval of information difficult for the purpose of writing task performance were excluded.

**Manipulation worksheets.** The participants in the TM group were supposed to do a worksheet of temporality of reference in every session of intervention. The worksheets were borrowed from the book "*Essential Grammar in Use Supplementary Exercises"* published by Cambridge University in 2007. This book was selected mainly because the grammar exercises were classified based on the focus of each chapter. Therefore, moving from Here and Now to There and Then, which was the route to manipulation of cognitive complexity in the current study was viable. Additionally, the caution was urged to select those worksheet exercises which include some amount of language production, hence better tackle the purposes of the experiment (Appendix A).

## Treatment and Data Collection

**Procedure.** The whole experiment was a six-session process for each group that took place for six weeks. During the first session, all the participants took a pre-test of paragraph-writing task for the accomplishment of which they had about 40 minutes. After the pre-test, all the groups received some preliminary explanations about the narrative writing genre and a review of organization of writing task. For the following four sessions, each group received its own type of intervention.

1. The direct written corrective feedback group: they were provided with direct indication and correction of grammatical errors on their written assignments. Then, the participants received their writings; they were given enough time to reflect on the corrected writings and ask any probable questions. Some common errors were written on the board to be discussed and probably internalized.
2. The indirect corrective feedback group: the grammatical errors of writing samples of the participants in this group were indirectly

indicated, i.e., error occurrence was marked with a red pen and no correction of error was provided. Then, the students were given time to reflect on their errors, correct them and ask questions if there were any. The elaboration on some common questions sometimes led to a short discussion about that error type at the end.

3. Manipulation of task cognitive-complexity group: the students in this group were not supposed to be given direct or indirect corrective feedback. Instead, it was intended to redirect their attentional resources towards linguistic and functional repertoire through resource-directing manipulation, in this case, +/- Here and Now variable, that is moving from Here and Now temporality of references to There and Then. The logic underlying this sequence was to initiate with simple tasks and gradually manipulate the conditions to meet the increased cognitive complexity of the task. Therefore, each session, the students were first engaged in a pre-task phase during which they were provided with some worksheets. Focusing on the temporality of reference, they had to use present tense (session one), past tense (session two), distinguish the appropriate context for the tense use (session three) and finally distinguish deictic expressions of this, here, now, there, then, and that (session four). When the worksheets were completed, the answers were corrected in classroom and there were general elaborations on common errors and misunderstandings. Then, they had to accomplish their writing tasks. There was no post-task reflection phase in order to prevent possible effects of indirect self-corrective written feedback.

All the experimental groups received four sessions of treatment. Then, all the participants were given a final writing prompt on the final session of the experiment which was considered the post-test of writing. Each treatment session for the WCF groups took about 40 minutes of writing task performance, 20 to 15 minutes of correction and about 20 to 30 minutes of reflection and post-task discussion. For the TM group, however, the pre-task of worksheet completion took about 15 to 20 minutes and the writing task, about 40 minutes.

**Coding and data analysis.** When the data collection process completed, all the collected samples from the pre- and post-tests of writing were analyzed for the general grammatical accuracy. To operationalize the grammatical accuracy, the ratio of error free T-units (a minimal Terminable Unit consisted of a main clause plus all its subordinated clauses) over the total number of T-units in the text was applied (Wolfe-Quintero & Inagaki & Kim, 1998). The taxonomy of correct grammar, published by Michigan State University in 2007, substantiated the data analysis process of the present study. Accordingly, the absence of the following items in Table 1 were counted as the criteria of inaccurate grammar instance:

Table 1.
*The Criteria for Grammatical Accuracy*

| Criteria | Definition |
|---|---|
| **Parallel Structures** | appropriate use of conjunctions for connecting similar word forms in a sentence or connecting the items of a list<br>avoid fragmented structures |
| **Subjects and Verbs** | Correct verb tense<br>subject-verb agreement in person and number<br>appropriate use of transitive, intransitive verbs |
| **Active and Passive voice** | Using the right voice for the right intention and in the right context |
| **Pronouns** | Case-context agreement of the pronouns (nominative, objective, possessive)<br>pronoun-antecedent agreement |
| **Articles** | Appropriate use of definite and indefinite articles (the, a, an) |
| **Word-order** | Accurate word-order for different sentence types (interrogatives, statements…) |
| **Negation** | Correct use of negation markers |
| **Capitalization** | Correct and appropriate use of capitalized words within appropriate contexts. |

The caution should be urged that inappropriate use of lexical words and/or word choice, discourse errors, dictation and punctuation errors were not

included. Finally, the data were fed into SPSS for further statistical analysis.

## Results

The current study was an attempt to compare the effects of written corrective feedback (direct and indirect) with the effects of manipulation of task cognitive-complexity (along resource-directing dimension) on the grammatical accuracy of learners' writings. The intention was to find if the manipulation of task complexity can be a better option for improving the writing accuracy compared to WCF. For this purpose, a one-way ANOVA test was applied to compare the means of the pre-test and then the post-test. But, before that, the necessary assumption for computing ANOVA procedure was observed by running the test of homogeneity of the variances.

Table 2.

*Descriptive Statistics of the Pre-test of Writing Accuracy*

| | N | Minimum | Maximum | Mean | Std. Deviation | Variance |
|---|---|---|---|---|---|---|
| DWCF | 15 | .13 | .45 | .2740 | .09156 | .008 |
| IWCF | 15 | .11 | .55 | .2953 | .13389 | .018 |
| TM | 15 | .14 | .57 | .3113 | .14436 | .021 |

As Table 2 depicts, the mean scores of the three experimental groups are approximately at the same level (DWCF= .27, IWCF= .29) with TM group being slightly higher (M= .31). However, the results of one-way ANOVA didn't prove any significant differences among groups.

Table 3.

*One-way ANOVA results of the Pre-test of Writing Accuracy pretest*

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | .011 | 2 | .005 | .335 | .717 |
| Within Groups | .660 | 42 | .016 | | |

| | | |
|---|---|---|
| Total | .671 | 44 |

As Table 3 illustrates, there is no significant difference among the three groups regarding the accuracy of the written samples (F=.335, p > .05). Therefore, identification of any probable differences at the post-test would be considered as the effect of treatments. The results of the post-test scores, then, were analyzed performing the same route of procedures (descriptive statistics → test of homogeneity of variance → one-way ANOVA).

Table 4.

*Descriptive Statistics of the Post-test of Writing Accuracy*

| | N | Minimum | Maximum | Mean | Std. Deviation | Variance |
|---|---|---|---|---|---|---|
| DWCF | 15 | .28 | .67 | .4947 | .10862 | .012 |
| IWCF | 15 | .11 | .63 | .3640 | .15963 | .025 |
| TM | 15 | .17 | .66 | .3653 | .14277 | .020 |
| Valid N (listwise) | 15 | | | | | |

Based on the descriptive results (Table 4) the mean score of the students' performance in the direct written corrective feedback group was higher than the other two groups (DWCF= .49 > IWCF=.36 & TM= .36). Though all the three groups' mean scores underwent an increase in comparison to the pre-test results, the one-way ANOVA was applied to assure the possibility of significant changes

Table 5.

*One-way ANOVA Results of the Post-Test of Writing.*

| posttest | | | | | |
|---|---|---|---|---|---|
| | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | .169 | 2 | .085 | 4.396 | .018 |
| Within Groups | .807 | 42 | .019 | | |
| Total | .976 | 44 | | | |

In congruence with the expectations, Table 5 confirms the presence of significant differences among the three experimental groups (F= 4.3, p < .05). Thus, to clearly specify where the difference lies, a Scheffe Post Hoc test was used.

Table 6.

*Scheffe Post Hoc of the Multiple Comparison of the results of Post-test of Writing Accuracy*

| (I) groups | (J) groups | Mean Difference (I-J) | Std. Error | Sig. |
|---|---|---|---|---|
| Direct | indirect | .13067* | .05062 | .045 |
| | manipulation | .12933* | .05062 | .048 |

According to Table 6 the direct written corrective feedback group (DWCF) outperformed the indirect written corrective feedback group (IWCF) with a mean difference of .13, and the task manipulation group (TM) with a mean difference of .12. So, the first question of the study was negatively answered.

The second question of the study investigated the effects of manipulation of task cognitive-complexity on the grammatical accuracy of the learners' writings in the TM group.

Table 7.

*TM Group Descriptive Statistics*

| | | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| TM group | pretest TM | .3113 | 15 | .14436 | .03727 |
| | Post-test TM | .3653 | 15 | .14277 | .03686 |

As Table 7 indicates, the mean score of writing accuracy at pre-test is lower than the mean score of the post-test (Pre-test M= .31 < Post-test M= .36). Therefore, the conjecture of significant differences was examined using the paired-sample t-test.

Table 8.

*Paired-sample t-Test of Grammatical Accuracy of TM Group's Writings*

| Pre-test Post-test pair in TM group | T | Sig (2-tailed) |
|---|---|---|
| | -1.741 | .104 |

Based on the findings shown in Table 8 manipulation of task cognitive-complexity had no significant effects on the grammatical accuracy of the writings of the learners in the TM group (P> .05).

## Discussion and Conclusion

As earlier was mentioned, the aim of the present study was to find an appropriate alternative for written corrective feedback as a teacher-oriented device of writing quality improvement which despite its long-standing history of investigation and research, its usefulness and practicality is still debatable (Bitchener, 2012; Ferris, 2006). For this reason, manipulation of task cognitive-complexity was proposed, mainly because, it predicts the potentials of increasing the access of the learners to functional and linguistic repertoires through redirecting their attentional resources towards meaningful cognitive requirements of the task (Robinson, 2003). Therefore, it was hypothesized that through appropriate resource-directing manipulations, the learners would spend more quality time on the task, and the results would be higher accuracy of performance. However, the statistical analysis of the results didn't confirm the superiority of task manipulation over the WCF. On the contrary, the students in direct WCF group outperformed the other two groups including the TM one. Although the results were partially in agreement with other studies on WCF (Chandler, 2003; Farjadnasab & Khodashenas, 2017; Ferris & Roberts, 2001; Sheen, 2007), they didn't support the expectations in terms of task manipulation effect. However, the thick literature of WCF has, in many instances, asserted that different contexts (Hyland & Hyland, 2006), and different target groups (Said & El Mouzrati, 2018; Saeli, 2019) cause different results, mainly because of the variety of expectations and preferences.

Moreover, students' dependency on the teacher and teacher's domination in all the aspects of classroom activities may cause the superiority of direct WCF over the indirect form and task manipulation. Reid (2001) explains that even the type of teachers' orientation in doing classroom activities (product-based versus process-based classroom activities) can affect the learners' access to their internal resources. That means, the less the learners have experienced the process-oriented activities like manipulation of task cognitive-complexity through resource-directing activities (+/- Here and Now), the less they would benefit from them. In such a context, receiving direct corrective feedback from a teacher who has always been the one to depend on for the correct responses and feedback, on the other hand, is more compatible with the students' general schema about classroom activities and learning, therefore, results in increased quality of production. Saeli, (2019), and Zohrabi, Torabi, and Baybourdiani (2012) also have asserted that learners' dependency on the teacher and their preference for direct corrective feedback are relevant within Iranian EFL contexts.

Additionally, the students in the direct WCF group were explicitly focusing on the grammaticality of their writings and were directly receiving feedback on the required level of accuracy during the treatment phase. This explicit attention to form enhances the possibility of raised awareness of the grammatical structures and empowers their appropriate use in later productions (Norris & Ortega, 2000; Sheen, 2003).

The discussion above can also explain why the results of examining the second question of the study regarding the task manipulation effects on the grammatical accuracy of the learners in the TM group was not significant. Indeed, no single change of instructional procedures produces global effects on learners' learning styles and preferences. Changing the patterns of communication within the classroom, and navigating them more towards self-reliance and autonomy appear to be necessary prerequisites of quality teaching and learning (Daneshkhah & Alibabaee, 2017). In fact, classroom atmosphere, activities, teachers' instructional behaviors and learners' level of cognitive, affective and linguistic

dependency are all intertwisted and make small pieces of a puzzle one can call appropriate teaching practice. What is crystal clear in this puzzle, however, is the importance of meaningful teaching and learning (Shak & Gardner, 2008). It is inferred then, that, manipulation of cognitive complexity can become more meaningful, if its context of application is meaningful and relevant to the students, as well.

In summary, the present study proposed the manipulation of task cognitive-complexity as an alternative to WCF. It was also hypothesized that, by its inherent potential to open-up appropriate cognitive channels towards linguistic and functional resources, the cognitive manipulation would significantly increase the grammatical accuracy of Iranian learners' writing productions. For the comparison purposes then, learners' productions under the effects of resource-directing manipulation of +/- Here and Now and writing samples collected from groups receiving direct and indirect corrective feedback were analyzed. Nevertheless, the results were in favor of direct written corrective feedback group, the students of which outperformed both indirect WCF participants and TM group. Though the intention of the present study was not to evaluate long-lasting effects, it is recommended to the researchers of the future studies to consider the effects of task manipulation both during a longer period of time and for long-lasting effects. In this sense, time may allow more practical opportunities for applying task manipulation in the classroom, and learners may find the tasks more relevant. Further, larger sample size can contribute to the final results of future studies. It is also recommended to apply different resource-directing manipulations (+/- few elements and +/- reasoning demands) as well as different types of written corrective feedback (peer-correction, self-correction).

Finally, it is worth mentioning that, teacher educators, curriculum designers, and policymakers constitute the primary target audience group of this study since task manipulation invokes foundational changes in both psycho-curricular underpinnings of the classroom and instructional-procedural aspects of it. Secondly, they are teachers who need to trust the potentials of appropriate meaningful task conditions for increasing the

quality of task learning and task performance. As was asserted in a recent study "through creating an appropriate balance between the cognitive state of language learners and the cognitive load of the writing task, instructional programs and teachers can pave the way for the learners to fully benefit from the time, energy and the money they spend on L2 learning process for their real-life purposes" (Daneshkhah & Alibabee, 2017, p. 112). Although the results of the present study couldn't approve the executive power of task manipulation, one cannot deny the outstanding results of all the studies conducted within the context of task-complexity manipulation advocating the efficacy of meaningful instructions and the quality learning caused by this pedagogy (e.g. Ishikawa, 2006; Kuiken & Vedder, 2008; Robinson, 2007; Ong, 2014; Ong & Zhang, 2013).

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## Appendices

**Appendix A.** A worksheet of Temporality of Reference for the TM group's task manipulation purposes (present tense practice).

**10** Sam and Marisa have very different lives. Read about Sam. Then complete the sentences about Marisa. Use the present simple, negative and then positive.

Sam gets up early. (1) Marisa doesn't get up early. She stays in bed until 10 o'clock. (stay)

He drives a car. (2) She ..... She ..... a bike. (ride)

He works in an office. (3) ..... ..... at home. (stay)

He has lunch in a restaurant. (4) ..... ..... lunch at home. (make)

He likes cats. (5) ..... ..... dogs. (prefer)

He plays computer games. (6) ..... ..... TV. (watch)

**11** Complete the description of London. Use the present simple.

**London, the capital city of the UK,**

(1) has (have) a population of eight million. It is a 24-hour city. Some people say the city never (2) ..... (sleep), so it's an exciting place to visit.

There are many interesting things for tourists to do and see in London – the London Eye, for example. The London Eye is a big wheel. It (3) ..... (have) 32 capsules and each one (4) ..... (hold) 25 people. The wheel (5) ..... (not move) very fast – a ride (6) ..... (take) 30 minutes. A ticket (7) ..... (cost) £11.50 for adults. You (8) ..... (not pay) for children under 5 years old. It is better to book your tickets before if you (9) ..... (not want) to wait for hours. The London Eye (10) ..... (not work) late at night, but it is open every day, usually until 10 pm.