



## Effect of Task Complexity Manipulation on EFL Learners' Use of Transitional Devices in Writing Tasks

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### Abstract

The present study was an attempt to investigate the impacts of different task complexity conditions including  $\pm$  planning time and  $\pm$  few elements on EFL learners' use of transitional devices in writing tasks. To this end, 60 intermediate EFL learners from three language institutes in Iran were randomly selected and were assigned to four groups of 15 participants. Each of the groups participated in 9 treatment sessions of instruction. At the beginning of every session the researcher introduced some transitional devices with a brief explanation about their meanings and usage and after that, the participants of each group were provided with a writing task that required them to write a paragraph about a special topic using all the transitional devices that were presented to them in that session. The number of correct uses of transitional devices in each participant's writing was calculated and reported in percentage and the average of every participant's performance during all 9 sessions was regarded as that participant's single score for the purpose of making comparisons between the four groups. The data was analyzed through Kruskal-Wallis's test and the findings revealed statistically significant differences among the four groups in doing the tasks. At the end, a questionnaire with 20 Likert-type items was utilized to explore the participants' perspectives of the role of task complexity in their writing. Consequently, the study revealed that using tasks with different levels of complexity can play a great role to improve the learners' grammar in terms of transitional devices.

**Keywords:** Planning time, Task complexity, Transitional devices, Writing tasks

### INTRODUCTION

Writing proficiency is highly significant for EFL learners since much of communication via the internet as a major communication tool is carried out through this major skill (Kroll, 2003). Some researchers like Naghdipour (2016) believe in the need to be skillful in English writing. Moreover, language learners and teachers as well as the experts who conduct investigations in the field of writing are in search of efficient and practi-

cable ways of enhancing writing as a complicated and multidimensional skill (Gunawardena, 2014; Hyland, 2013). Consequently, the necessity of writing skill for a variety of reasons including instructional and professional goals is regarded as a considerable aspect of L2 teaching (Muller, Gregoric, & Rowland, 2017).

EFL teachers can have a highly significant role in improving learners' writing since learners usually need their assistance to employ innovative techniques in their writing to be able to achieve communicative competence (Ferris

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& Hedgcock, 2004). In relation to this, Polio and Park (2016) believe in the need to use novel types of instructions to teach writing so that the learners are guided about how to write more effectively and efficiently. In order to make writing courses more creative and communicative, some researchers believe that it is essential to substitute the traditional modes of language instruction with task-based language teaching (TBLT) method (e.g., Ellis, 2008; Dobao, 2012). Nevertheless, Golparvar and Rashidi (2021) remark that a large number of investigations conducted in the field of TBLT have focused more on tasks for oral production while written production has received little attention. Furthermore, Allen (2018) argues that even the educational programs that have concentrated on L2 task-based writing have not focused on the increasing significance of writing skill for EFL learners. Therefore, it appears that conducting investigations about the effects of tasks on improving L2 learners' writing can be of great significance.

As Ellis (2003) states, task complexity is concerned with how much a particular task is simple or complicated in nature. Robinson (2001) argues that there are three categories of task complexity including the special qualities of the task that are relevant to the essence of the input, the processing operations related to doing the tasks, and the task conditions. Actually, task complexity is an important concept to be considered in designing educational programs since in syllabus design it is necessary that the materials be arranged in order to maximize learning quality (Nunan, 1989). The kind of task and the amount of learner proficiency levels are highly significant features to which L2 instructors must pay attention when they use tasks to guarantee more opportunities for learning through language production (Kim, 2009). Therefore, conducting investigations regarding the impact of task complexity on the enhancement of producing language in both oral and written forms can provide both L2 teachers and learners with precious information.

According to Ishikawa (2006) tasks at various complexity levels have significant

effects on the enhancement of writing skill in terms of producing fluent, accurate and complex texts by L2 learners. Therefore, the present study considers the influence of tasks at various levels of complexity on grammatical improvement in L2 learners' writing in terms of using transitional devices. In the current study, task complexity has been determined by the number of elements in the tasks as well as the absence or presence of planning time for the learners before doing the tasks.

## **LITERATURE REVIEW**

### **Theoretical Background**

Robinson (2003) remarks that tasks can be used based on a special order so as make them similar to real-world conditions, with the purpose of making L2 learners succeed in achieving the essential performance objectives. Moreover, Robinson (2001a) argues that the cognitive complexity of a task can be manipulated, which can make its performance meaningful and attainable for the learners since language learners are imposed by the structure demands of the tasks. In other words, selecting appropriate tasks and even the type of task manipulation can adjust their level of complexity to the mental and attentional resources of the learners.

In order to increase or reduce the number of cognitive demands originated from the tasks, Robinson (2001a) introduces three major items that can play great roles in recognizing the amount of cognitive demands in tasks including intrinsic complexity, learners' perception of task complexity and finally task conditions. These factors as a whole form the Triadic Componential Framework that was introduced by Robinson (2001b) based on which increases in task complexity levels should be regarded as a significant factor when creating and arranging a task-based syllabus since more complicated tasks may lead to more accurate grammar and higher level of complexity in syntax. Based on the Triadic Componential Framework, there is infinite space for memory resources that can be compatible with the amount of the cognitive demands of

tasks which can alter the way of reaching these resources and lead to various impacts on the output. Robinson presents two separated dimensions for such resources to be accessed including *resource-directing* and *resource-dispersing* manipulations of task-complexity. In Robinson's Triadic Componential Framework, there is a significant theoretical distinction between resource-directing (such as the number of elements in a task) and resource dispersing (such as the absence or presence of planning time for the learners before doing the tasks) aspects of complexity (Robinson 2003).

Actually, in resource-directing dimension, the memory and attentional resources are directed toward a wider range of functional demands on the language user. In other words, these resources can be manipulated along three factors including: 1. +/- here and now (for example, when the learners are supposed to talk about a series of events through using the present tense while observing the photos that are related to them, it is regarded as a task with + here-and-now, while the narratives that are performed using memory without having access to any picture, and presented in the past tense are regarded as the tasks with – here-and-now), 2. +/- reasoning demands (for example, the tasks in which the learners are expected to arrange some pictures in chronological order of happening based on a special story, if the learners are required to explain about the chronological order of events through presenting reasons that require some expressions like the words *therefore*, *because*, *so*, *etc.* are + reasoning demands, while the tasks that do not ask the learners to present reasons about the relations of events are – reasoning demands), and 3. +/- few elements (for example, in a composition writing task, if the learners are required to introduce the tourists attractions of a country to a foreign tourist who is only interested in specific and limited attractions, the task will be with –few elements, while if these limitations are not required to be considered in writing that composition, the task will be with + few elements). According to Robinson's anticipation, through manipulat-

ing the factors involved in resource-directing dimension of task complexity, the amount of accuracy and even the complexity level of a task can increase.

On the other hand, in cases that fluency in task completion is intended, the cognitive demands of the task can be changed so that the attentional resources are *dispersed* from the learners' linguistic knowledge, and this way the task can have a real-life essence which is relevant to the resource-dispersing dimension of task complexity. The factors that can be manipulated in resource-dispersing dimension include 1. +/- planning time (an amount of time to plan how to do a task), 2. +/- single task (the existence of one task at a time or two or more at the same time), and 3. +/- prior knowledge (access to previous information before doing a task). Consequently, changing the complexity level of a task through the above-mentioned items is expected to impact the cognitive state among the learners influencing the quality of the ultimate output (Robinson, 2001a, 2001b). That is why it can be used instead of static instructional procedures of developing writing skill and is worth investigating.

Also, another investigation was conducted by Yahyazadeh Jelodar and Farvardin (2019), which focused on the influence of resource-directing and resource-dispersing dimensions of task complexity on different aspects of writing skill including the participants' fluency and accuracy in producing language. The results revealed that the manipulation of task complexity through resource-dispersing dimension could positively affect fluency in writing whereas task complexity manipulation through resource-directing dimension could increase the participants' writing accuracy.

### The present study

In according to the related literature and also the guidelines of output hypothesis presented by Swain (1993), it is concluded that output can enable learners to produce language more deeply and this indicates the significance of writing tasks and their role in improving learners' proficiency. Conse-

quently, the current study investigates the impacts of different task complexity conditions on EFL learners' use of transitional devices in writing tasks. In fact, the study hypothesizes that writing tasks could enhance writing proficiency in terms of using transitional devices. Therefore, this research questions are addressed in this study:

***RQ1.** Are there any statistically significant differences among the effects of different task complexity conditions on EFL learners' use of transitional devices in writing tasks?*

***RQ2.** What are EFL learners' opinions about grammar instruction-based on task complexity?*

## **METHOD**

### **Participants**

According to convenience random sampling, six intact language classes in three language institutes located in Iran were selected. Then, through conducting an Oxford Placement Test (OPT), 60 out of 114 learners who were classified as intermediate, were selected for the study. The participants' age ranged from 18 to 24 years old, and they all spoke Farsi as their native language. The participants' gender was not regarded as a variable in the study. The selected learners were then randomly assigned into four equal groups (each group with 15 participants). All groups had three hours of English instruction per week working on transitional devices and writing tasks at different levels of complexity for three weeks (9 sessions in general).

### **Instruments**

The first instrument utilized in the current investigation was the Oxford Placement Test (OPT) that was exerted to measure the participants' level of general proficiency in English, and to select a homogenous sample at the beginning of the study. As to the validity of the OPT, Birjandi and Siyyari (2010) found a significant correlation between the participants' performance in a paper-based TOEFL and their scores in OPT.

The second instrument was a questionnaire with 20 Likert-type items utilized to discover

the participants' perception of the role of task complexity in their writing development. In fact, the questions centered around some aspects including the participants' experience, familiarity and reflection on planning time and few-element based instruction. The questionnaire items were checked by three Ph.D. holders in English language teaching, who were faculty members of university to ensure the content validity of the items. The questionnaire was revised repeatedly according to the received feedback from the experts.

### **Data collection**

In order to investigate the impacts of different task complexity conditions including  $\pm$  planning time and  $\pm$  few elements on EFL learners' use of transitional devices in writing tasks, the current study employed a quantitative approach using quasi-experimental design, supplemented by a questionnaire related to the participants' opinions regarding the role of different levels of complexity in doing the writing tasks that were presented to them.

As the first step of the study, prior to the treatment phase, the learners' homogeneity was checked through conducting OPT. Sixty out of 114 male and female Iranian EFL learners, who were at intermediate level of general English proficiency, were finally selected. Following this, they were randomly divided into four groups, and the number of participants in each group was 15.

The treatment phase included 9 sessions of instruction held 3 times a week. At the beginning of every session the researcher introduced some transitional devices with a brief explanation about their meanings and usage and after that, the participants of each group were provided with a writing task that required them to write a paragraph about a special topic which had been determined by the researchers. Every task was designed in two versions including + few elements and - few elements. The level of complexity in the tasks with + few elements was lower compared to the ones with - few elements. Groups 1 and 3 received + few-element tasks while groups 2 and 4 were presented

with –few-element versions of the same tasks.

The number of elements in the tasks was not the only factor which determined their complexity. In fact, the absence or presence of planning time was the other factor that influenced the complexity of the tasks in the current investigation. Planning time refers to the amount of time that is available to the learners to think about how to do a task before doing it. Consequently, groups 1 and 4 were provided with such an advantage while groups 2 and 3 were deprived of it. In other words, every group received the tasks through a special combination of  $\pm$  planning time and  $\pm$  few elements as follows:

Group 1: (+few elements/+planning time)

Group 2: (-few elements/-planning time)

Group 3: (+few elements/-planning time)

Group 4: (-few elements/+ planning time)

Based on the above categorization, the participants in group 1 received the least complex version of the tasks, and the participants in group 2 received the most complex version. Groups 3 and 4 were presented with tasks at a moderate level of complexity each through a different condition.

In every session of the treatment, the participants were supposed to use all the transitional devices that were taught to them in that session for doing the task. The number of correct uses of transitional devices in each participant's writing was calculated and reported in percentage and the average of every participant's performance during all 9 sessions was regarded as that participant's single score for the purpose of making comparisons between the four groups.

#### ***An example of the tasks with $\pm$ few elements***

An example of a task with + few elements was a writing task in which the participants were required to write to a friend in a foreign country inviting him or her to Iran through introducing different places using a variety of transitional devices, while this task in the more complex version which was –few elements would be the same task but with some limitations for the participants. For instance, the participants were asked to write to the same person

while paying attention to the fact that the audience of their writing was a person from Canada at the age of 20 who did not like to visit historical places, but he was only into visiting natural sights and living in expensive hotels.

#### ***An example of the tasks with $\pm$ planning time***

An example of a task with + planning time was a writing task in which the participants were required to write to a friend in a foreign country inviting him to Iran through introducing different places using a variety of transitional devices with 10 minutes time before they did the task so that they could think about the sentences and ideas they were going to produce and get ready enough. While the groups with – planning time didn't take advantage of such an opportunity.

After the whole treatment sessions finished, a twenty-item questionnaire was presented to the participants of the four groups, and they were required to express their opinions about planning time-based and few elements-based instructions through choosing the alternative which was more in line with their ideas. But as it was mentioned earlier each of the groups experienced only a special type of the task complexity. Therefore, before giving the questionnaire to the participants, they were familiarized with all types of the task complexity conditions used in this study. For this purpose, four more tasks each representing one of the conditions was presented to all of the participants, so that they could develop opinions in order to answer all the items of the questionnaire.

#### **Data Analysis**

Inferential and descriptive statistics were exerted to analyze the data gathered for the purpose of considering the probable significant differences among the four groups in doing the writing tasks with different levels of complexity. In the first phase of data analysis, the descriptive statistics related to OPT were analyzed and reported. Then in the second phase, the homogeneity of the four groups in terms of EFL proficiency was examined.

After that, the assumptions of normality and the equality of error variances in the



scores of writing tasks were considered and reported. In the next step, the non-parametric Kruskal-Wallis's test was run instead of one-way between groups ANOVA to investigate the differences among the four groups in terms of using transitional devices in writing tasks. Since normality assumption was not met, Kruskal-Wallis's test was used instead of one-way ANOVA. Reliability of the questionnaire was examined through checking the internal consistency of the scale by calculating Cronbach alpha. All the above-mentioned analyses were carried out by SPSS (version 21).

## RESULTS

The current study was an attempt to explore the impacts of manipulation of task complexity along different combinations of resource-directing ( $\pm$  few elements) and resource-dispersing ( $\pm$  planning time) dimensions on the use of transitional devices by Iranian EFL learners. The aim was to discover whether manipulating task complexity could affect the participants' writing in terms of using transitional devices. To this end, four group conditions were created:

Group 1 (+few elements/ +planning time).

Group 2 (-few elements/ -planning time).

Group 3 (+few elements/ - planning time).

Group 4 (-few elements/ +planning time).

The effects of these instructional conditions were measured through calculating the number of correct uses of transitional devices in the writing tasks. Using one-way ANOVA test for the purpose of comparing the performance of the groups was not an appropriate choice in the present study since one of the assumptions underlying ANOVA, the lack of significant outliers, was violated. Outliers refer to those parts of the gathered data that violate the common and expected

pattern. Inspection of Boxplots in SPSS output revealed that one score, which belonged to the eleventh participant in the first group, was identified as outlier. Pallant (2020) remarks that some statisticians believe that the whole extreme outliers should be removed from the original data. Another option is to use non-parametric tests. Kruskal-Wallis's test as a non-parametric substitute to one-way between-groups ANOVA does not consider normality in the data and is not so sensitive to outliers and can be employed in situations where such assumptions are violated and exerting one-way ANOVA is not suitable. In the present study, Kruskal-Wallis's test was used to analyze the data related to the writing-task of the study.

As an assumption underlying between-groups ANOVA and repeated measures ANOVA, normality of the distribution of the learners' scores on both measures (i.e., OPT and writing tasks) was checked. In this regard, Kolmogorov-Smirnov values were examined for eight sets of scores (i.e., eight groups). The groups included: four groups taking the OPT and four groups corresponding to the first research question. Kolmogorov-Smirnov values were found to be non-significant (i.e.,  $p > .05$ ) for 7 sets of scores, indicating normal distribution of the scores in these 7 groups. However, in one set of scores (i.e., group 4 in the writing-task phase of the study), the Kolmogorov-Smirnov value was significant (i.e.,  $p < .05$ ), which indicated the violation of normal distribution assumption (see Table 1). As mentioned above, instead of one-way between groups ANOVA, the non-parametric Kruskal-Wallis H Test, in which the normality assumption is not required, was utilized to consider the differences among the performance of the four groups in the writing tasks.

**Table 1**  
*Tests of Normal Distribution of Learners' Scores*

Measure	Groups	Kolmogorov-Smirnov		
		Statistic	df	Sig.
OPT	Group 1	.136	15	.200
	Group 2	.200	15	.108
	Group 3	.159	15	.200
	Group 4	.119	15	.200
Writing task	Ex. G1	.211	15	.070
	Ex G2	.233	15	<b>.027*</b>
	Ex G3	.168	15	.200
	Ex G4	.137	15	.200

Note: \* The assumption of normal distribution is violated.

Reliability of the questionnaire was tested through checking the internal consistency of the scales by calculating Cronbach alpha. Values above .7 (preferably above .8) are considered reliable. (Pallant, 2020, p. 342). The reliability index was found to be .829.

To ensure that the participants in the four groups were homogeneous in terms of EFL proficiency at the outset of the study, the researcher administered the OPT to the participants. The descriptive statistics for the OPT scores are reported in Table 2.

**Table 2**  
*Descriptive Statistics for OPT Scores*

N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for				
				Mean		Minimum	Maximum	
				Lower Bound	Upper Bound			
Group 1	15	127.4000	4.43686	1.14559	124.9429	129.8571	121.00	135.00
Group 2	15	128.5333	5.61715	1.45034	125.4227	131.6440	121.00	138.00
Group 3	15	128.4667	4.92612	1.27192	125.7387	131.1947	121.00	137.00
Group 4	15	130.1333	6.13964	1.58525	126.7333	133.5334	121.00	139.00

Levene's tests revealed that the assumption of the equality of error variances was also retained (Table 3). Since all the assumptions

were met, one-way between-groups ANOVA was run to test the homogeneity of the four groups in terms of EFL proficiency.

**Table 3**  
*Test of Homogeneity of Variances for OPT*

Levene Statistic	df1	df2	Sig.
.927	5	84	.468

The results of one-way ANOVA showed that there was no statistically significant difference

among these four groups in terms of EFL proficiency at the outset of the study (see Table 4).

**Table 4**  
*One-way between-Groups ANOVA Results Showing Instructional Groups Learners' Homogeneity on OPT*

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	82.856	5	16.571	.538	.747
Within Groups	2586.133	84	30.787		
Total	2668.989	89			

Note. P\* < .05

Are there any statistically significant differences among the effects of different task complexity conditions on EFL learners' use of transitional devices in writing tasks?

As mentioned above, the assumptions of lack of outliers and normality of data distribution were violated in some of the groups. Moreover, the assumption of the equality of error variances was not met (see Table 1 and Table 5). Therefore, the non-parametric Kruskal-Wallis's test was conducted to investigate the differences among the four groups in the use of transitional devices in writing tasks.

**Table 5**  
*Test of Homogeneity of Variances for writing task*

Levene Statistic	df1	df2	Sig.
4.178	3	56	.010

As displayed in Table 6, group 1 has the highest mean rank, and group 2 has the lowest mean rank. Groups 3 and 4 have the second and the third ranks respectively.

**Table 8**  
*Results of Pair-wise Comparisons for Writing Tasks*

Sample 1-Sample 2	Test Statistics	Std. Error	Std. Test Statistics	Sig.	Adj.Sig.
Group 2-Group 4	-21.633	6.371	-3.395	.001	<b>.004</b>
Group 2-Group 3	-27.267	6.371	-4.280	.000	<b>.000</b>
Group 2-Group 1	32.833	6.371	5.153	.000	<b>.000</b>
Group 4-Group 3	5.633	6.371	.884	.377	1.000
Group 4-Group 1	11.200	6.371	1.758	.079	.473
Group 3-Group 1	5.567	6.371	.874	.382	1.000

As it is demonstrated in Table 8, there are statistically significant differences between groups two and four, two and three, and two and

**Table 6**  
*Mean Ranks of four Groups in Writing Task*

	Level of Complexity	N	Mean Rank
Writing Task scores	Group 1	15	42.90
	Group 2	15	10.07
	Group 3	15	37.33
	Group 4	15	31.70
	Total	60	

Kruskal-Wallis's test showed statistically significant differences among the four groups in the writing task. Therefore, the null hypothesis (There is no significant difference among the impacts of different task complexity conditions on EFL learners' use of transitional devices in writing tasks.) is rejected. The results are reported in Table 7.

**Table 7**  
*Result of Kruskal-Wallis Test for Writing Task*  
**Writing Task scores**

Chi-Square	30.519
df	3
Asymp. Sig.	.000

In order to locate the differences, the researcher conducted pair-wise comparisons (Table 8).

one. In fact, group 4 (mean =31.70), group 3 (mean =37.33), and group 1(mean = 42.90) significantly outperformed group 2 (mean =10.07).



**Table 9**  
*Learners' Perception of Few Elements-based Instruction*

No.	Statements	Mean	SD
1	I didn't know anything about doing writing tasks with few elements at the beginning of the study	3.28	1.009
2	I feel more self-confident in doing writing tasks focusing on few elements.	3.59	1.546
3	Writing tasks which focus on few elements are easier to do.	2.27	1.577
4	Focusing on few elements in writing tasks contributes to improving my writing skill.	3.83	1.36
5	Focusing on few elements prevents the distraction of my attention from the major goal of the task which is enhancing my knowledge of language.	3.77	1.408
6	Through focusing on few elements in writing tasks I can decrease the number of grammatical mistakes in the language I produce.	3.53	1.342
7	Through focusing on few elements I can have the opportunity to remember more advanced vocabulary to use in my writing.	3.45	1.677
8	Through focusing on few elements I can have the opportunity to use more complex structures in my writing.	3.13	1.324
9	Focusing on few elements can decrease my anxiety in doing writing tasks.	3.05	1.815
10	Focusing on few elements in writing tasks can be helpful since I can concentrate on my grammar knowledge and take a better advantage of it.	3.63	1.732

Based on Table 9, the overall results showed that most of the participants favored the efficacy of the elements-based instruction, especially in terms of Item 4 (Focusing on few elements in writing tasks contributes to improving my writing skill,  $M=3.83$ ,  $SD=1.36$ ), Item 10 (Focusing on few elements in writing tasks can be helpful since I can concentrate on my

language knowledge and take a better advantage of it,  $M=3.63$ ,  $SD=1.732$ ), and Item 2 (I feel more self-confident in doing writing tasks focusing on few elements,  $M=3.59$ ,  $SD=1.546$ ). Furthermore, to explore the participants' opinions on planning time-based instruction the following questionnaire was administered and its results were analyzed.

**Table 10**  
*Learners' Perception of Planning Time-based Instruction*

No.	Statements	Mean	SD
11	I didn't know anything about having planning time in doing writing tasks at the beginning of the study.	3.03	1.344
12	I believe that having time to think about how to do writing tasks before doing them can promote my self-confidence.	3.561	1.455
13	Writing tasks with planning time are easier to do.	2.78	1.621
14	Planning time contributes to improving my writing skill.	2.92	1.115
15	Planning time prevents my distraction from the major goal of the task which is enhancing my knowledge of language.	3.09	1.546
16	Through planning time, I can decrease the number of grammatical mistakes in my writing.	3.23	1.588
17	Through planning time I can have the opportunity to remember more advanced vocabulary to use in my writing.	3.08	1.252
18	Through planning time, I can have the opportunity to make more complex structures in my writing.	3.79	1.321
19	Planning time can decrease my anxiety in doing writing tasks.	3.43	1.004
20	Planning time in writing tasks can be helpful since I can review my grammar knowledge and take a better advantage of it.	3.81	1.329

In according to table 10, Concerning the participants' responses to the items of the

questionnaire, the findings indicated that, in general, the participants again believed in the

positive effect of such instruction (i.e. Planning time-based instruction), especially in terms of Item 18 (i.e. Through planning time, I can have the opportunity to make more complex structures in my writing,  $M=3.79$ ,  $SD=1.321$ ), Item 12 (i.e. I believe that having time to think about how to do writing tasks before doing them can promote my self-confidence,  $M=3.561$ ,  $SD=1.455$ ), and Item 19 (i.e. Planning time can decrease my anxiety in doing writing tasks,  $M=3.43$ ,  $SD=1.004$ ).

## DISCUSSION

The major goal of the current study was to find out if significant differences can be found among the effects of different complexity conditions including  $\pm$  few elements and  $\pm$  planning time on EFL learners' use of transitional devices in writing tasks. Furthermore, it probed into Iranian EFL learners' opinions towards planning time-based instruction and few-element-based instruction.

According to the findings obtained from the study, it was confirmed that writing tasks with various amounts of complexity using different combinations of  $\pm$  few elements and  $\pm$  planning time can lead to statistically significant differences in the number of transitional devices used correctly by intermediate EFL learners. The findings located these differences between groups 2 and 4, groups 2 and 3 and finally groups 2 and 1. Since group 2 received the most complex type of tasks compared to the other groups, the reason for significantly better performance by all the other groups can be interpreted to be because of the lower level of complexity in their writing tasks.

Such findings can be explained through the terms introduced by Levelt (1989) based on which the lower amount of processing load for the conceptualizer leads to more "space" for the formulator to operate within. The findings of the present research paper are in relation with the results of the investigations conducted by Ishikawa (2006), Tavakoli and Skehan (2005), Amini, Bayat, and Mahmoodi (2022), Abdi Tabari and Miller (2021), Fazilatfar, Kasiri, and Nowbakht (2020), Rahimi and Zhang (2019), Malicka (2020)

The results are also consistent with Robinson's Triadic Componential Framework according

to which it is believed that doing more than one task simultaneously can distract the learners' attention and cause weaker performance. It is also in line with Skehan and Foster's (2001) Limited Attentional Capacity Model (LACM), based on which cognitive loads on working memory during language production will make language learners prioritize the completion of the tasks or the focus on linguistic aspects. In fact, task completion favors fluency while linguistic aspects favor complexity and accuracy of utterances.

Among the other investigations that support the results of the present study, Tavakoli and Skehan (2005) and Tavakoli and Foster (2008) are of great significance since they argued that the processing load is relieved by tasks of low complexity, and this condition can also free up the attention space to be allotted to accuracy in language production. In another investigation conducted by Skehan (1996) it was claimed that when the learners are asked to write more complex clauses, the accuracy of their language production decreases and this partially supports the findings of this study.

In addition, Robinson (1995b), whose study was in relation with task complexity, argued that tasks at higher complexity levels require learners to think about how to code the production of language and how to make suitable expressions. Consequently, the lower scores of the groups in the current study that received more complex tasks can be interpreted to have their roots in the fact that coding language production is a great burden for the learners and can influence their performance in a negative way. Furthermore, Skehan (1998) believed that attention capacity in human being is limited thus; increasing the complexity of tasks can create a sort of trade-off between meaning and form.

On the other hand, the findings of this study run against the Cognition Hypothesis (Robinson, 2007) according to which, when tasks are functionally and cognitively difficult or demanding, learners will be more likely to produce language in a more accurate and complex way. The reason for such a contrast between the results of the current study and the above-mentioned hypothesis is that in the present study the participants of group 2 who received the most complex type of task were

outperformed by all the other groups and were not as successful as the participants of the other groups in developing paragraphs using transitional devices.

In relation with the importance of planning time before doing tasks, the results of a study conducted by Ashoori Tootkaboni and Pakzadian (2020) revealed that every time learners are presented with an amount of time to manage their minds before doing a task, the accuracy of their productions enhance in a significant way. However, some related investigations in the literature have not always proved a predictable pattern or link between the existence of planning time and quality of performance. In other words, the findings of some investigations are in favor of the positive impacts of planning time on enhancing the quality of producing language (e.g. Yuan & Ellis, 2003; Tavakoli & Skehan, 2005; Skehan & Foster, 1997; Foster & Skehan, 1996), while some other investigations (e.g. Crooks, 1989; Iwashita, Elder, & McNamara, 2001) did not present findings that support this claim.

## CONCLUSION

The findings of this study can be of supreme importance for addressing TBLT and learning through presenting tasks at various levels of complexity to improve EFL learners' writing. The significance of arranging and organizing task in educational settings has led to the appearance of task complexity. In a task-based syllabus, tasks can be arranged in a way that their cognitive and linguistic demands match with the learner's level of proficiency.

Based on the obtained results of the current study and related literature, the following conclusions are drawn. First, Task-based instruction (TBI) can enhance the learners' English and develop their writing skill in general. This can be due to the fact that TBI requires the learners to be active rather than passive participants in doing the activities and tasks. In other words, the learners themselves take the responsibility of their own development in language learning and the teacher can guide them and give feedback only whenever it is

needed. Third, the findings of the present research indicated that language learners are able to use transitional devices in tasks at various levels of complexity. However, their performance in producing such sentences is better when the level of complexity is lower in terms of the number of elements included in the tasks and also the existence of planning time before doing them. In fact, both the participants' performance and the results of the questionnaire supported such an impression.

One important factor is that the present study provides further empirical support for the fact that the cognitive demands of tasks in a second language can affect L2 learners' performance in writing skill and the amount of time and attention they devote to L2 writing. In addition, in line with the trade-off hypothesis, the findings of the current study suggest that L2 learners have limited attentional resources and are not able to devote an equal amount of attention and time to the processes and dimensions of producing L2, and that these limitations should be considered in explaining the effects of task complexity on L2 learning and performance as well as in utilizing cognitively demanding tasks.

Although this study provides some fascinating information in the field of task complexity in L2 learning, it has a number of limitations as well. One important point that should be considered is that care should be taken in generalizing the findings of the current study since the sample cannot be representative of all L2 learners at intermediate level of language proficiency. The next point is that this study was done in 9 sessions in a three-week period and based on Storch (2009), progress in L2 skills cannot occur over such a short time, so more longitudinal investigations with longer periods are necessary to discover the degree to which tasks of different complexity levels can improve writing proficiency in terms of using transitional devices. Consequently, we are almost in the initial steps of considering the impacts of task complexity in the Iranian context and now there is the opportunity for conducting further research about it.

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