The Impact of Pre-task Instruction and Task Rehearsal on Fluency, Accuracy and Complexity of Iranian EFL learners' writing

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Abstract

The purpose of this study was to examine the impact of pre-task instruction and task rehearsal on fluency, accuracy, and complexity of Iranian EFL learners' writing. Forty five foreign language learners who had little access to the l2 outside the classroom participated in this study. They were both male (44%) and female (56%). Measures of fluency, accuracy, and complexity were utilized to measure students' writing. Data were analyzed using MANOVA and ANOVA. The results of the study revealed that pre-task instruction and task rehearsal have positive effect on learners' writing. The result of the study and their pedagogical implications were discussed.

Keywords: pre-task instruction, task rehearsal, second language writing, accuracy, fluency, complexity

1. Introduction

Second language acquisition researchers have studied the notion of planning with reference to different theories; One of these models is the "computational model"(Lantolf ,1996), which is based on an analogy between the human mind and a computer by which human being possesses limited capacity in terms of the amount of information that can process from input to output. These limits can lead language learners to prioritize one aspect of language over another. Levelt's (1989) model of speech production, on the other hand, considers speakers as complex information processors who are capable of translating intention, thought, and feeling into articulated speech. This model identifies three autonomous processing stages in language production: (1) conceptualizing the message, (2) formulating the language representation, and (3) articulating the message.

Over the last 20 years, the majority of studies on task planning have been concerned with L2 learners' oral production (Bygate,2001; Ellis, 2003; Mojavezi, 2014). We have learned a great deal about how the opportunity to plan before or during a task may improve some aspects of L2 speech. However, we have little knowledge about what L2 learners actually do to plan for a task. In the meantime, there is currently a hot debate between Skehan's trade-off hypothesis (1998) and Robinson's (2001, 2007) cognition hypothesis and all of the studies which have tested these two hypotheses and have tried to falsify one of them have focused on oral performance. This study tries to shed light on the effect of pre-task instruction and task rehearsal on writing ability. In other words, an important goal of this study would be to see which hypothesis (cognition or trade-off) is more consistent with the data which will be obtained in an EFL context.

2. Review of Literature

Recent years have seen enormous growth of interest in task-based language learning and teaching. There are several reasons for this surge of interest. First, a 'task' is a construct of equal import to both second language acquisition researchers and language teachers (Ellis, 2003). Second, task-based pedagogy is capable of a wide range of interpretations. That is, any single task, Ellis (2003) states, has the potential to be performed in a number of ways, depending on how the participants orient to it. This perceived *flexibility* of task-based tradition can deflect some of the criticisms leveled against it. One of these criticisms is based on the claim that performing tasks and language use does not *necessarily* lead to fluent and accurate production or language acquisition (Reinders, 2009).

From the vantage point of information processing theories, this is in part due to the fact that language learners' attentive or processing capacity is restricted, and hence, they cannot process 'schematic' and 'systemic' knowledge simultaneously (see Carroll, 2008; Ellis, 1994, 2003, 2005;Skehan , 1998a, 1998b, 2007a; Skehan& Foster 1999, 2001; Van Patten, 2009). This being so, language learners tend to *bypass* language form in favor of meaning drawing on their wide repertoire of communicative strategies to which they have access (Skehan, 1998a).

2.1. Concept mapping as a form of pre-task instruction

The present study adopted concept mapping as an instructional strategy and examined its potential for improving ESL (English as a Second Language) learners' written production.Concept mapping was first developed by Hanf (1971) as a model for improving teaching of study skills. It typically starts with generating words relevant to the topic and clustering them into groups of associated words. Students then develop their own ideas on the topic and draw organizational structures

The technique of concept mapping has been widely practiced and studied under different terms, such as semantic mapping (e.g., Cronin, et al., 1992; Heimlich and Pittelman, 1986; Lipson, 1995; Schultz, 1991), cognitive mapping (e.g., Boyle, 1996; Peresich, et al., 1990;Reynolds and Hart 1990) and webbing (e.g., Brown and Salisch, 1996; Norton, 1993; Pieronek, 1994). A major reason for selecting this strategy as a target instruction is that concept mapping is recognized to be effective for both conceptual and linguistic development (Heimlich and Pittelman, 1986) and is widely implemented in classroom instruction.

A number of studies have reported the positive effects of concept mapping in a variety of instructional settings. For example, it has been used as a technique for increasing vocabulary (Harley et al., 1996; Johnson and Steele, 1996; Morin and Goebel, 2001), improving reading comprehension (Baumann and Bergeron, 1993; Carrell et al., 1989; Lipson, 1995; Tang, 1992) and writing skills (Cronin et al., 1992; Schultz, 1991), and facilitating the comprehension of concepts in subject areas (Park, et al., 1999; Roth,1994). In writing contexts, concept mapping has been said to facilitate the process of writing (Pieronek, 1994; Renner, 1992; Rey, 2000; Washington, 1988); however the extent of empirical research on mapping is limited and most of the studies were done in

L1 writing contexts. For example, Cronin et al. (1992) reported the progress of a district plan for secondary schools in Mississippi, demonstrating that mapping strategies had promoted students' understanding of text organization and writing processes based on the results of writing tests over a four-year period.

2.2. Task Rehearsal

To build Task repetition involves asking language learners to repeat the same or slightly altered tasks at intervals of, for example, one or two weeks (Bygate and Samuda 2005: 43). In task repetition, the first performance of the task is regarded as a preparation for, or a pre-task activity before, further performances (Ellis 2005). At first glance, this might seem reminiscent of behaviorist drills which are based on the assumption that that language learning happens through a process of habit formation through repetition. (For instance, Paulston and Bruder (1976: 12) identified different types of repetition drills and defined them as 'plain repetition of the cue').However, in its new conceptualization, task repetition does not at all refer to 'verbatim' repetitions of the cues in the second language classroom; rather it involves the repetition of familiar form and content (Bygate 2006).

The effects of task repetition on L2 oral production have been examined in a number of studies. For example, Bygate (1996, 2001) documented the positive effects of task repetition on fluency and accuracy of second language output. Gass et al. (1999) found similar patterns regarding the effects of task repetition with L2 learners of Spanish, while Lynch and McLean's (2000) study revealed that recycling had positive effects on both accuracy and fluency in an English for Specific Purposes context. Similarly, Ahmadian and Tavakoli (2011) found that task repetition could be used as a pedagogic tool to direct L2 learners' effect of task repetition on complexity and fluency of L2 speech and, more recently, Hawkes' attention towards form.

3. Method

3.1. Participants

This study was a between-groups design aimed to examine the effects of pre-task instruction and task rehearsal on fluency, accuracy, and complexity, of EFL learners' writing.

The participants in this study were 45 intermediate EFL learners recruited from two teacher education centers in Iran. A special effort was made to identify students who have the same ability. To achieve this, 160 participants mastering in Language Teaching and was administered "Oxford Placement Test 2" (Allan, 1992), as a pre-test, to select the students with equivalent language proficiency at the outset of the study. Based on Oxford Placement Test, 45 students were eligible to participate in this study.

3.2. Instruments

In this study, measures of fluency, accuracy, and complexity was used to evaluate the quality of the participants' written production:

3.2.1. Fluency measures

Measuring fluency as a construct in writing has been a hot debate from the 1970s. In the first attempt, Hunt (1970) tried to measure children's L1 writing fluency. He used the construct of a T-unit, or minimal terminal unit, accompanied by any associated dependent clauses. He chose T-units rather than sentence length because it was well known that children in their native language could and would write long sentences solely using coordination. More recent studies validated this construct by using the number of syllables per minute (e.g., Chenoweth, A. & Hayes 1998; Chenoweth and Hayes, 2001; Ellis and Yuan , 2004; Ellis and Yuan, 2005).

Following the theoretical rationale for measuring fluency, this study will utilize the same measures used by Chenoweth and Hayes & Ellis and Yuan (2004) for measuring writing fluency, that is, syllable per- minute: the total number of syllables produced divided by the total number of seconds a participant will take to complete the task multiplied by 60.

3.2.2. Complexity measures

a. *Syntactic complexity:* It deals with the ratio of clauses to T-units in the participants' production. T-unit rather than C-unit will be employed in this study because the task performance is mono-logic and contains few elided utterances. It should be noted that T-unit analysis was initially developed to assess written language and has been replaced by C-unit analysis for oral production.

b. *Syntactic variety*: It is the total number of different grammatical verb forms used in the task. Grammatical verb forms include tense (e.g., simple past, past continuous), modality (e.g., *should*, *have to*), and passive voice.

3.3.3. Accuracy measures

For accuracy measurement the following two criteria will be used:

a) **Error-free clauses**: the percentage of clauses that do not contain any errors. Errors were defined as deviant from standard norms with respect to syntax, morphology, and/or lexicon. Lexical errors are defined as errors in lexical form or collocation (e.g., *I was waiting you*). So, all errors in syntax, morphology, and lexical choice will be considered.

b) **Correct verb forms**: the percentage of accurately used verbs in terms of tense, aspect, modality, and subject-verb agreement.

3.4. Procedures

3.4.1. Data collection

For data collection, the participants were required to write an argumentative essay under different planning conditions. The topic was: "Some people believe that watching Television is harmful. Others maintain that it is beneficial. What is your idea? Use specific reasons and examples to support your idea".

3.5.2. Data Analysis

All writing productions of different groups under the above-mentioned conditions were segmented, coded, and scored based on the measures chosen for assessing complexity, accuracy, and fluency. To ensure that the segmentation and scoring of the transcripts are conducted reliably, the data was segmented, coded, and scored by two independent experts.Then, inter-coder/inter-rater reliability coefficient magnitudes was estimated. SPSS version 22.0 was used to check the normality of distribution via skewness and kurtosis indices. Each aspect of accuracy and complexity was submitted to MANOVA. Finally, writing fluency was measured using one- way ANOVA followed by Post-Hoc Tukey tests.

4. Results and Discussion

In the present study the impacts of pre-task instruction and task rehearsal on accuracy, complexity, and fluency of EFL learners' writing were investigated. This study tried to examine the following research hypothesis:

The first research hypothesis was directed toward identifying the impact of pre-task instruction and task rehearsal on writing complexity of Iranian EFL learners. It was hypothesized that pre-task instruction and task rehearsal have no influence on EFL Learners' writing complexity. To this aim, complexity was measured in two different ways: syntactic complexity and syntactic variety. So, the higher the obtained score, the better the complexity of language would be. Table 4.1 summarizes the descriptive statistics on learners' complexity writing.

Table 4.1. Descriptive Statistics on students' writing complexity

Groups	N	Minimum	Maximum	Mean	Std. Deviation	Variance
S. complexity (Group 1)	15	1.10	1.60	1.28	.14	.021
S .Complexity(Group 2)	15	1.30	1.70	1.49	.11	.014
S. complexity (Group 3)	15	1.50	2.30	1.86	.22	.051
S. variety (Group 1)	15	11.10	16.50	13.54	1.59	2.54
S. variety (Group 2)	15	14.40	22.30	17.51	2.70	7.29
S. variety (Group 3)	15	15.60	32.10	22.33	2.78	6.94
Valid N (list wise)	15					

As indicated in table 4.1, it became clear that mean scores on syntactic complexity and syntactic variety of group three is higher than groups two and one. Group three preformed significantly differently from group two and one. Also learners in group two outperformed those in group one. Thus it can be inferred that the mean scores of learners in group two is higher than that of group one. However, in order to test the null hypothesis, a one-way between –group multivariate analysis of variance (MANOVA) was performed to investigate the impact of pre-task instruction and task rehearsal on syntactic complexity and syntactic variety of EFL learners. Preliminary assumption

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testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity.
After checking the preliminary assumptions on using MANOVA, the researchers conducted Multi- Analysis of Variance (MANOVA). The result of this analysis is shown in table 4.2.

Table 4.2. Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	D.F	Mean Square	F	Sig.
Groups	Syntactic -complexity	2.59	2	1.29	45.36	.000
	Syntactic-variety	523.75	2	261.87	21.94	.000

As shown in table 4.2, syntactic complexity and syntactic variety are significant (p=.000). F value was significant. This indicates that there is significant difference between / among the groups.

Regarding syntactic varieties, as measured by the total number of different grammatical verb forms used in the task, the essay by planners who had both pre-task planning and task rehearsal contained the most syntactically complex sentences, averaging 22.33 clauses per T-unit, whereas those who had no pre-task planning Without any opportunity to rehearse the task provided the least syntactically complex with 13.54 clauses per T-unit.

The results of this study support the findings of the previous studies suggesting significant differences among the groups with different task conditions. In Robinson's theory, task complexity is determined by two sets of features, 'resource directing' (e.g. whether or not the task requires reasoning) and 'resource depleting' (e.g. whether or not there is opportunity for strategic planning). These two factors 'interact and affect task production in measurable ways' (p. 31).In contrast, accuracy and, in particular, complexityare achieved by learners drawing on their rule-based system and thus require syntactic processing. Complexity is distinguished from accuracy in that it is related to the 'restructuring' that arises as a result of the need to take risks whereas accuracy reflects the learner's attempt to control existing resources and to avoid errors.

The result of this study, also, support Ellis (2003, 2008) Ellis & Barkhuizen (2005) ideas, who maintain that complexity is characterized as the extent to which the language produced in performing a task is elaborate and varied (Ellis 2003, p.340) and pertains to learners' tendency to take risks to use the cutting edge of their linguistic knowledge which may ultimately lead to the process of restructuring (Ellis, 2008; Ellis & Barkhuizen, 2005). Thus, these findings led to the rejection of the first Null Hypothesis.

The second research hypothesis was directed toward identifying the impact of pre-task instruction and task rehearsal on accuracy writing of Iranian EFL learners. It was hypothesized that pre-task instruction and task rehearsal have no influence on EFL Learners' writing accuracy. In order to test the null hypothesis, a one-way between – group multivariate analysis of variance (MANOVA) was performed to investigate the impact of pre-task instruction and task rehearsal on syntactic complexity and syntactic variety of EFL learners. Table 4.3, summarizes the descriptive statistics on students' writing accuracy.

Table 4.3. Descriptive Statistics on Students' Writing Accuracy

	N	Minimum	Maximum	Mean	Std. Deviation
Correct_verb_G1	15	.69	1.30	1.00	.20
Correct_verb_G2	15	.68	79.00	6.19	20.14
Correct_verb_G3	15	.87	1.50	1.20	.20
Error_free_G1	15	.06	1.10	.71	.23
Error_free_G2	15	.59	1.30	.87	.18
Error_free_G3	15	.78	1.40	1.00	.16
Valid N (list-wise)	15				

The result of the descriptive statistics indicates that group three had the highest mean on both measures, followed by group two. Group one had the lowest mean. However, In order to test the second null hypothesis, a one-way between –group multivariate analysis of variance (MANOVA) was performed to investigate the impact of pre-task instruction and task rehearsal on writing accuracy in terms of error -free clauses and also correct verb forms(table 4.4).

Table 4.4.MANOVA test results on accuracy

Source	Dependent Variable	d. f.	Mean Square	F	Sig.
Corrected Model	Correct-verb-forms	2	.02	.95	.39
	Error-free-clauses	2	.16	4.87	.01
Intercept	Correct-verb-forms	1	46.65	1514.27	.000
	Error-free-clauses	1	31.43	955.91	.000
Groups	Correct-verb-forms	2	.02	.95	.39
	Error-free-clauses	2	.16	4.87	.01

As the above table indicates the significant level for correct verb form is .39and error - free clauses is .01.Sowe can infer that the result of analysis is not significant. So the null hypothesis has been retained.

The third research hypothesis was directed toward identifying the impact of pre-task instruction and task rehearsal on fluency writing of EFL learners. It was hypothesized that pre-task instruction and task rehearsal have no influence on EFL learners' writing fluency. To this end, fluency was measured in One-way ANOVA. The researcher used the Construct of a T-units or minimal unit rather than sentence length T-units. So, the higher the obtained score, the better the fluency of language would be.

Table4.5. One-way ANOVA for Fluency

	Sum of Squares	D. f.	Mean Square	F	Sig.
Between Groups	7.71	2	3.85	62.36	.000
Within Groups	2.59	42	.06		
Total	10.31	44			

As indicated in the above table, the result of between groups one-way ANOVA is significant.

Thus, these findings lead to the rejection of the third Null Hypothesis as well. In terms of fluency in writing, it can be surmised that pre-task instruction aids fluency in writing in two principal ways: First, it facilitates process and text planning for content and organization. This is reflected in the pre-task instructors organize the information that needs to be conveyed, establishes the setting and describes the characters, identifies the main events, and evaluates them will find the pressure on working memory lessened during on-line assembly (Raab, 1992, cited by Zimmerman, 2000) Second, pre-task instruction may help to increase L2 writers' confidence in their ability to write clearly and effectively and, for this affective reason, may reduce their need to engage in extensive monitoring. Zimmerman found that writers revise more when writing in their L2 than in their L1. Chenoweth and Hayes (2001) found that L2 writers who were more proficient wrote more fluently than less proficient writers; pre-task planning, therefore, may compensate for lack of L2 proficiency where fluency is concerned. The results of this study support the findings of the previous studies suggesting significant differences among the groups with different task conditions.

The result of this study, also, support Foster &Skehan(1996) ideas, believe that a number of studies have shown that when learners have the opportunity to plan a task before they do it, they are more fluent than when planning is not possible. Task repetition is said to be particularly useful to increase learners' fluency and complexity. Probably because "when learners know what they are going to talk or write about they have more processing space available for formulating the language needed to express their ideas with the result that the quantity of the output will be enhanced and also the fluency and complexity" (Ellis, 2003, pp.246-7). An alternative view, promulgated by Robinson, is that pre-task planning simplifies the task and thus obviates the need to attend closely to form during performance but assists automatic access to stored language and so leads to greater fluency.

5. Conclusion

The key finding of this research , as discussed in the preceding chapters was as follow : First , the analyses indicated that there is reasonably positive correlation between pre-task instruction , task rehearsal and some aspects of learners' writing . This study revealed that learners with having opportunity, pre-task instruction and task rehearsal try to improve their writing. Secondly, the study showed that there is a significant positive correlation between task rehearsal, pre-task instruction and EFL learners' writing achievement. In other word, having higher opportunity in pre-task instruction and task rehearsal, the higher the learners' achievement in writing. In summary, it is clear that pre-task instruction enhances learner output in a written task. This is manifested in greater quantity, fluency, and complexity of language, although such planning appears to have little effect on accuracy.

5.1. Implications of the study

Teachers and researchers are well-aware of teacher on EFL learners' writing and achievement. We can hypothesize that having opportunity, pre-task instruction and task rehearsal can influence learners' writing and achievement in different settings and it is not context bound. It is also important that educational contexts, as well as schools' administrators provide high opportunity in order to increase pre-task instruction and task rehearsal so that EFL learners' writing will be improved.

The concept of task repetition has clear implications for pedagogy. Research into task repetition provides insights into how teachers might develop the pre-, while- and post-task phases of lessons. Research also explores the ways in which tasks might be linked within lessons (and across sequences of lessons) to provide learners with opportunities to work repeatedly with similar linguistic content. Thus, instead of focusing upon the performance of tasks in isolation (which characterizes much research to date), the concept of task repetition moves the focus of debate clearly towards the pedagogic use of tasks within lessons.

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