Task complexity and its effects on complexity, accuracy and fluency of EFL learners' written production

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Abstract

The present study investigated the effects of task complexity on complexity, accuracy, and fluency of learners' written narrative task production. The participants of this study were 30 intermediate students, who were randomly selected as one group. Two picture stories were used for the purpose of the study. All 30 participants were required to look at the picture stories in 15 minutes and narrate them at two separate sessions but in same condition. During the first session, they looked at the pictures which were selected based on the courses they have passed and performed here-and-now (HN) task by writing their narratives in present tense and at the second session, with similar conditions, they performed there-and-then (TT) task by writing their narratives in past tense. After all writings were collected and scored, three scores were obtained by each rater as measures of complexity, accuracy, and fluency. The results of statistical analyses showed that tense variation had significant effects on the complexity of learners, but it did not have any significant effects on the accuracy and fluency of EFL learners'.

Keywords: task-based language teaching, task complexity, accuracy, fluency, complexity.

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1. Introduction

   English reading and writing are considered as the two most important skills in learning and teaching process for both EFL students and teachers (Wolff, 2000). According to Harmer (2004), writing is one of the four most important skills that should be mastered by students and always focuses on a large part of the syllabus in language teaching. Alexander (2008) mentioned that the ability to write well have profound impact on our life. Furthermore, writing skills may enhance students' chances for success. Chastain (1988) stated that writing creates significant changes which have focused on language teaching and learning process within the past 20 years such as using task-based strategy for teaching and learning. While most task-based research has focused on spoken language production, the relationship between task complexity and written language production still remains understudied. In most studies, task complexity is a pedagogical issue which can be graded, sequenced, and manipulated by learners. Robinson (2001) defined that task complexity as "the result of the attentional, memory, reasoning, and other information processing demands imposed by the structure of the task on the language learner". He has argued that increasing the cognitive demands of L2 tasks will lead to increases in the accuracy and complexity of L2 speech production, and also to greater learning of task input. In other words, making a writing task more complex leads to a greater degree of complexity and higher accuracy of the written text. This means that increasing task complexity along resource-directing variables (e.g., few/many elements, here-and-now /there-and-then, with/without reasoning demands) will lead learners to pay more attention to the complexity and form in their written output. Although the effect of different kinds of task complexity in narrative writing has been investigated by Gillabert (2007) and so many others, the result is not complete. Based on Robinson's framework, this study will explore the possible effect of using two types of narrative tasks (here-and-now /there-and-then) to achieve a desirable elicitation of learner language in terms of accuracy, fluency and complexity among Iranian EFL learners.

2. Literature Review

2.1. Task Complexity

   Task complexity is a construct widely used in the behavioral sciences to seek and predict the relationship between task characteristics and information processing (Gill & Hicks, 2006). Ellis (2003) defines task complexity as "the extent to which a particular task is inherently easy or difficult." Generally, based on Ellis definition, there are two types of tasks, namely, the simple task which imposes low cognitive processing demands and the complex task which requires more cognitive processing to be accomplished (Ellis, 2003).

   Robinson (2001) said that:

   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. These differences in information processing demands, resulting from design characteristics, are relatively fixed and invariant.

   He states that task complexity is related to the tasks cognitive dimensions and can be utilized in task design. So the complexity of the task will be impressive on task performance. Task designers must make use of some operational framework for selectively adjusting and increasing the demands of tasks to constantly approximate real-world performance conditions.

   Robinson also believes that task complexity is based on the cognitive demands of each task in the phase of conceptualization. Complex concept will use more complex syntactic structures and these types of complicated tasks are more complex in respect of linguistic formation and conceptualization (as cited in Sanayee & Rezaei, 2014).

2.2. Models of Task Complexity

2.2.1. Skehen and Foster's Limited Attentional Capacity Model

   Skehan and Foster's model indicates that if a task requires significant attention to be given to its content and need to be in a high level of cognitive processing, there will be less attention available to be given to the linguistic output. So, tasks which are cognitively demanding are likely to draw attentional resources away from language forms (Kuiken & Vedder, 2007). Skehan (1996, 1998) tries

to separate learner's general goal, becoming more native-like in learners performance, into three specific areas: accuracy, fluency, and complexity. Skehan (1996) proposes a trade-off relationship that operates between these three aspects of speaker production in a particular task. It means that the learner cannot give full attention to these three aspects of language production simultaneously. Therefore, according to him, some tasks may lead learners to prioritize fluency, others to prioritize complexity or accuracy of production.

According to Skehan (1998, 2001, 2003), the Limited Capacity means that the learner's mind must divide its attention between the message being conveyed and the formal aspects of language essential for the message to be successfully formulated. Skehan and Foster (1999, 2001) believe that the idea of limitedness of capacity has trade-off effects among the three aspects of language production: accuracy, fluency, and complexity; that is, when task complexity increases, learners instead of focusing on complexity and language production will focus on the content of the task. Skehan and Foster (2001), proposing Limited Attentional Capacity Model, believe that different task aspects and conditions of task performance can affect learners' attention to the accuracy, fluency or complexity of their language and this involves a trade-off on these dimensions.

2.2.2. Robinson's Triadic Framework of Task Complexity

As cited in Rahimpour (2010), one of the dominant constructs of task complexity is Robinson's triadic framework or Cognition Hypothesis. Cognition hypothesis of task-based language learning, put forward by Robinson, establishes the existence of a very strong link between the cognitive load tasks impose on learners' processing and their production and development refers to mind ability of learners. This is based on findings from both functional/cognitive linguistics and first language developmental psychology (Gilabert, Baron & Llanes, 2009). The main pedagogic claim of cognition hypothesis is that pedagogic tasks should be designed and sequenced on the basis of increases in their cognitive complexity (Robinson & Gilabert, 2007).

Three predictions of the cognition hypothesis by Robinson are that increasing the cognitive demands of tasks along the latter developmental dimensions will (a) push learners to greater accuracy and complexity of L2 production in order to seek the consequently greater functional/communicative demands they place on the learner and (b) promote interaction and heightened attention to and memory for input, so increasing incorporation of forms made salient in the input; and that (c) individual differences in cognitive and affective factors contributing to perceptions of task difficulty will progressively differentiate performance and learning as tasks increase in complexity. In other words, Robinson and Gilabert (2007) declare that the information about the effect of task complexity or cognitive complexity on language performance can be used to guide decision-making about sequencing tasks in syllabus design.

Therefore, cognition hypothesis (Robinson, 2001, 2003, 2005, 2007) assumes that when tasks increase in the conceptual/ communicative demands of learners, learner attention to aspects of the second language system that attempt to meet those demands may also be increased.

2.3. Studies on Here-and-Now vs. There-and-Then

As mentioned earlier, Robinson believed that increasing task complexity along resource-directing dimensions affects accuracy and complexity positively and fluency negatively. According to Gilabert (2007), many previous studies have shown that tasks in the There-and-Then (TT) (complex) vs. Here-and-Now (HN)(simple) conditions as resource-directing dimensions, There-and-Then are more cognitively demanding than tasks performed in the Here-and-Now, with specific consequences for production . Robinson (1995) examined the impact of manipulating Here-and-Now on three different narratives. In the Here-and-Now condition, learners were asked to narrate a comic strip in the present tense while looking at it. The There-and-Then was operationalized by having the students narrate the story in the past tense and without visual support during performance. Such operationalization was based on both L1 and SLA findings that had shown that displaced, past time reference is more complex and therefore appears later than present, context-supported reference. Robinson predicted less fluent speech but higher lexical and structural complexity as well as accuracy for There-and-Then tasks. Robinson established that the most complex narrative, performed in displaced past time reference, elicited more accurate speech and more lexical complexity than the narrative performed in the Here-and-Now.

Rahimpour (1997) extended Robinson's research by crossing a complexity variable (Here-and-Now) with a condition variable (open vs. closed). He operationalized three levels of complexity by including a narrative in the Here-and-Now, one in the There-and-Then, and one in the Here-and-Now/There-and-Then. Rahimpour (1997) hypothesized that the Here-and-Now/There-and-Then narrative would show that learners who carried out the most complex versions of the task, were significantly less fluent, with no significant differences regarding either structural or lexical complexity, and with significant improvements with regard to error-free units but not target-like use of articles.

2.4. Defining Complexity, Accuracy, Fluency (CAF)

2.4.1. Complexity, Accuracy and Fluency

Complexity refers to properties of both tasks and language performance. Complexity, like accuracy and fluency is multi-dimensional and difficult to define (Thompson, 2014). It refers to how elaborate the language is used in the production (Mohammadabadi, Dabaghi & Tavakoli, 2012). According to Foster and Skehan (1996), complexity reflects how learners can use the forms "*closer to the cutting edge of inter-language development*" and is more associated with learners' willingness to take risks to use the language with which they are not familiar. Developments in complexity reflect improvements in interlanguage, so that more input or knowledge lead to more linguistically complex L2 production (Skehan, 1998).

Skehan and Foster (1999) viewed accuracy as "the ability to avoid error in performance, possibly reflecting higher levels of control in the language, as well as a conservative orientation, that is, avoidance of challenging structures that might provoke error" (p. 96). Thompson (2014) defines accuracy as problematic and difficult especially when it is necessary to differentiate it from fluency. It is concerned with how well the language is produced in relation to the rule of the target language (Skehan, 1996).

Various definitions represented to describe fluency (Thompson, 2014). Skehan (1996) claimed that fluency is "the capacity to mobilize the inter-language system to communicate meaning in real time" (p. 46). It was measured by calculating the number of words per T-units (Arent, 2003; Ishikawa, 2006) which the total numbers of words in writing divide by the total number of T-units in the narrative.

3. Method

3.1. Research Question

- Does task complexity (here-and-now task versus there-and-then task) have any effect on the EFL learners' written accuracy, fluency and complexity?

3.2. Research Hypothesis

- H_{01}: Task complexity (here-and-now versus there-and-then) does not have any effect on EFL learners' written accuracy.

- H_{02}: Task complexity (here-and-now versus there-and-then) does not have any effect on EFL learners' written fluency.

- H_{03}: Task complexity (here-and-now versus there-and-then) does not have any effect on EFL learners' written complexity.

3.3. Participants of the Study

The number of participants who took part in this study was 30 out of 90 intermediate level Iranian English students who study at Nasr English Language institute in Ardabil, Iran. All participants were bilingual with Azari Turkish as their L1 and Persian as their second language who were all native speakers of Persian; on average they were studying English for three years. The participants were between the ages of 12 and 19 years. They were both male and female which studied Connect, book

1, third edition, Oxford University Press (2011) United Kingdom. As it was necessary to determine the proficiency level of the subjects and assign them to one group, an Oxford Placement Test (OPT) was administered to 90 participants and the participants were assigned to one group based on their scores. The participants whose scores were one standard deviation below and above the mean were selected for the study.

3.4. Instrument of the Study

Following Kuiken and Vedder (2007), two different picture stories were chosen as instruments for this study. In order to avoid the effect of topical knowledge on L2 learners' writing and finding similar result, two picture stories were chosen from previous research by Rahimpour and Hosseini's article (2010).These picture stories were based on here-and-now task (simple task) which was adopted from *Teaching the spoken language* book by Brown and Yule (1983) and the picture story for there-and-then task (complex task) was adopted from *Referential communication tasks* book by Yule (1997) (Appendices, A, B).

The picture story in Here-and-Now (HN) (present simple) task was presented with four-frame picture story (see Appendix A). It was a story about a man and his wife who are sitting down on sofa in a living room. The man decides to go out and gets ready in front of the mirror, puts his clothes on and goes out. He goes to bar while and orders something to eat. Finally after some minutes later, he come back home.

The picture story in There-and-Then (TT) (past simple) task was presented with eight-frame picture story (see appendix B). It was a story about a woman who decides to do some shopping. She goes to a shop. When she is carrying a trolley, she bumps into her friend. Her friend puts her son in that trolley. While the two women are talking, the boy starts bustling around and moving things away. The woman doesn't realize what is happening until the she wants to pay for things. The baby is not there. The manager calls the police to solve woman's problem.

3.5. Measures of Complexity, Accuracy and Fluency

For measuring complexity, the criterion of S-nodes per T-units was considered (Gilabert, 2005; Ishikawa, 2006; Rahimpour, 1997; Robinson, 1995). An S-node is equivalent to a verb phrase (VP) (both finite and infinite). In this case, the number of sentence nodes; tensed and untensed verbs, was divided by the total number of T-units in the narrative. In other words, in this study the number of sentence nodes in writing was divided by the total number of T-units in that writing. In this study, the accuracy of the writings was measured by calculating the number of error-free T-units divided by the total number of T-units (Arent, 2003; Storch, 2009). Error-free T-clauses are those T-Units which contain no grammatical, syntactic, or lexical, and spelling errors (Mohammadabadi et al., 2012). Fluency was measured by calculating the number of words per T-units (Arent, 2003; Ishikawa, 2006) in which the total numbers of words in writing is divided by the total number of T-units in the narrative.

3.6. Procedure of the Study

An Oxford placement test was administered to the students. Based on the scores, the participants whose scores were one standard deviation below and above the mean were randomly selected as one group. Then two writing tasks were assigned to the learners in which cognitive complexity was manipulated. These tasks were chosen for a number of reasons. Because various narrative tasks, particularly with regard to the use of cartoon pictures, have been used in other similar studies of task complexity (Ellis & Yuan, 2004; Ishikawa, 2006) and thus comparison with the results of these studies would be easier. And also, as previous studies indicate (Skehan & Foster, 1999), a way of ensuring that the task is reasonably demanding on the participants, is to select a picture story that requires interpretation on the part of participants.

After selecting picture stories, the participants were required to write a story about those picture stories. The idea of setting time for first and second narratives was originated about 15 minutes. The participants wrote their narratives based on the picture stories at two separate sessions. They were informed that there isn't any score and their collaboration are just to complete the research. They

were allowed to write notes on a sheet of paper and view the picture story while writing then their notes will be taken away after they will perform the task. During the first session, they looked at the pictures which were selected based on the courses they had passed and performed here-and-now (HN) task by writing their narratives in present tense (see appendix A). At the second session, with similar conditions, they performed there-and-then (TT) task by writing their narratives in past tense (see appendix B). Subsequently, after all writings were collected and scored by the researcher, three scores were obtained by each rater as measures of complexity, accuracy, and fluency, respectively.

4. Results

4.1. Data Analyses and Results

The analyses of the raw data related to the research questions, were conducted by using two Wilcoxon Signed-rank tests and a Paired-Sample T-Test. Table 4.1 displays the descriptive statistics for accuracy measure of both HN and TT performances. As the table shows, the mean score of accuracy decreased from the first performance (*M*= 0.50517) to the second performance (*M*=0.45500).

Table 4.1. Descriptive Statistics for Accuracy of Both Performances

	N	M	SD	Md
Accuracy of HN	30	0.50517	0.262104	0.50000
Accuracy of TT	30	0.45500	0.209527	0.38500

Table 4.2 shows the results of the analysis on the scores obtained for normality of accuracy for both HN vs. TT narratives performances. The distribution of scores, as discussed in the test of normality for accuracy data is not normal for the first narrative, while it is normal for the second one. In the first performance the Sig. value is (0.02) which is less than (0.05). This means that the distribution of the scores in both samples is not normal.

Table 4.2. Tests of Normality for Accuracy Indices of Both Performances

	Kolmogorov-Smirnov		
	Statistics	df	Sig.
Accuracy of HN	0.208	30	0.02
Accuracy of TT	0.191	30	0.07

Table 4.3 indicates the significance of the Wilcoxon Signed Rank Test which is 0.396. It reveals that there's not a statistically significant differences in accuracy of participants' performances, z = - 0.849.

Table 4.3. Wilcoxon Signed Rank Test for Accuracy

Z	-0.849
Asymp. Sig. (2-tailed)	0.396*

Table 4.4 displays the descriptive statistics for fluency measure of both HN and TT performances. As the table shows, the fluency mean of the first narrative equals 9.64883 with the standard deviation of (4.378854), while the fluency mean and standard deviation of the second one equal (9.76167) and (4.015126) respectively. Comparison of the means of the subjects in the first and second narrative writing indicates that the subjects narrate approximately with the same rate of fluency in both cases.

Table 4.4.Descriptive Statistics for Fluency Indices of Both Performances

Pair1	N	M	SD	Md
Fluency of HN	30	9.64883	4.378854	9.50000
Fluency of TT	30	9.76167	4.015126	9.00000

Table 4.5 displays the results of this analysis on the scores obtained for normality test of fluency for both HN vs. TT narratives performances through Kolmogorov-Simirnov Test. In both cases the Sig. value is 0.20 which is more than 0.05. This means that, in both distributions of scores are normal and it is safe to employ the parametric statistics for the further data analyses.

Table 4.5. Tests of Normality for Accuracy Indices of Both Performances

	Kolmogorov-Smirnov		
	Statistics	df	Sig.
Fluency of HN	0.392	30	0.200*
Fluency of TT	0.109	30	0.200*

The results of Paired-Samples T-Test for fluency of both performances are illustrated in table 4.6. The significance of paired-pairs *t*-test equals 0.84. This value is greater than 0.05 and it can be concluded that there is no significant difference between the means. As this table shows, the difference between the means -0.112833 and *t* (29) = -0.192, *p* < 0.05 (two-tailed).

Table 4.6. Paired-sample T-Test for Fluency

	Paired Differences			df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean		
Fluency HN & Fluency TT	-.112833	3.214034	.586800	29	.84

Table 4.7 displays the descriptive statistics for complexity measure of both HN and TT performances. As the table shows, the mean score of complexity increased from the first performance (*M* = 1.17083) to the second performance (*M*= 1.69900).

Table 4.7. Descriptive Statistics for Complexity Indices of Both Performances

	N	M	SD	Md
Complexity of HN	30	1.17083	0.788825	1.00000
Complexity of TT	30	1.69900	1.047491	1.41500

As Table 4.8 shows the results of this analysis on the scores obtained for normality of complexity for both HN vs. TT narratives performances. In the first performance the Sig. value is (0.01) which is less than (0.05). This means that the distribution of the scores in both samples is not normal.

Table 4.8. Test of Normality for Complexity Indices of Both Performances

	Kolmogorov-Smirnov		
	Statistics	df	Sig.
Complexity of HN	0.219	30	0.01*
Complexity of TT	0.138	30	0.152

*p < 0.05

Similar to accuracy, the effect size for Wilcoxon Singed Rank Test of third research hypothesis was calculated in table 4.9. In this study, as cited in Zarei (2016), the negative sign of *z* value was ignored. The obtained *r* value was 0.31, which would be considered a large effect size using Cohen's (as cited in Pallant, 2011) criteria of 0.01 for small effect, 0.06 for medium effect, and 0.14 for large effect. This value means that 31% of differences between the two mean occurs by tense variation (the independent variable of the study).

Table 4.9. Wilcoxon Signed Rank Test for Complexity

Z	-2.403
Asymp. Sig. (2-tailed)	.016*

Table 4.9 indicates the significance of the Wilcoxon Signed Rank Test which is .016. It reveals that there's a statistically significant differences in complexity of participants' performances, z = - 2.403, with a large effect size (r = 0.31).

5. Findings and Discussion

The research question, that is, "does task complexity (here-and-now task vs. there-and-then task) has any effect on the EFL learners' written accuracy, fluency and complexity?" was analyzed by two applications of Wilcoxon Signed Rank Test and Paired Sample T-Test.

In the case of accuracy, regarding to first null hypothesis (H_{01}), stating "task complexity (here-and-now versus there-and-then) does not have any effect on EFL learners' written accuracy", the results demonstrated that there is no significant difference between the two tasks in terms of accuracy of learners' written narrative task performances. The mean accuracy values decreased from the first performance (HN) to the second performance (TT). Since the significance level of both tasks of accuracy is higher than 0.05 (significance level p < .05), this means that increasing task complexity had significant effect on accuracy. Therefore, decrease of accuracy from the simple task to the complex task of written narratives, reveals that, the first null hypothesis (H_{01}), stating "task complexity (here-and-now versus there-and-then) does not have any effect on EFL learners' written accuracy", is not rejected.

The decrease in accuracy in this study is in line with those of some other studies. The finding of this study is in line with the results of the studies done by Skehan & Foster (1999), Robinson (2007), Mehrang (2009) who found that task complexity had no effects on the accuracy of learners' narratives. Also Hosseini and Rahimpour (2010) found that task complexity doesn't have any significant effect on the accuracy of written narratives of L2 learners.

The findings of this study in terms of the effect of task complexity on accuracy do not support the predictions of Cognition Hypothesis (Robinson, 2007). The cognition hypothesis claims that increasing the cognitive demands of tasks will push learners to greater accuracy of L2 production (Robinson, 2003). However, the results are in contrast with the findings of researchers like Rahimpour (2007), Rahimpour and Hazar (2007), Ishikawa (2006), and also Kuiken and Vedder (2007, 2008). Thus, increasing task complexity creates a kind of trade-off between form and meaning. Tavakoli and Foster (2008) also argued that simple task will relieve processing load and free up attention space to be devoted to accuracy (as cited in Salimi, Dadashpour & Asadollahfam, 2011). Furthermore, the result of this study is rejected by Gilabert's studies (2007) and also in contrast with the results of the study conducted by Haghjou & Oroujlou (2012), and Salimi & Dadashpour (2012).

Supporting these arguments, the production of less accurate language in terms of task complexity can be attributed to the fact that (Van Patten, 1990; Schmidt, 2000; Rahimpour & Salimi, 2010) learners can't pay attention to language forms without a loss of attention to content and when they are free to allocate attention, they prioritize concern for the content over concern for the form.

In case of fluency, regarding second null hypothesis (H_{02}), stating "task complexity (here-and-now versus there-and-then) does not have any effect on EFL learners' written fluency", a paired- sample *t*-test was run to compare the two narratives of the subjects. The results demonstrated that the mean fluency values of the first task performance (simple task) (HN) increased to the second task performance (complex task) (TT). Since the significance level of tasks of fluency is higher than 0.05 (significance level p < .05), this means that increasing task complexity had no significant effect on fluency. However, the result of paired t-test shows that there is statistically significant difference between the fluency of written narratives in HN task and TT task. Therefore, increase of fluency from the simple task to the complex task of written narratives, reveals that, the, is rejected.

The finding of this study is in line with Hosseini and Rahimpour (2010), Ishikawa (2006) and, Ong and Zhang (2010) who found that increasing task complexity led to greater fluency of writing. In a related study, the finding of this study confirms Abdollahzade and Fard Kashani (2011) who argued that task complexity has no significant effect on fluency. Ishikawa (2006) found that increasing task complexity with respect to the ±Here and Now dimension increased the accuracy, complexity, and fluency of written language production. He was believed that participants produced more words per T-unit in the complex (TT) task.

On the other side, the finding of this study doesn't support the finding of Skehan and Foster's

(2001) Limited Attentional Capacity Model and Robinson's (2005) Cognition Hypothesis. They believed that increasing task complexity effects fluency negatively. Robinson (1995) claimed that during TT task performance, learners need to recall the events at the same time that they code the stories propositionally (i.e. at the same time that they access propositional knowledge, organize it, and code it), and establish transitions between events. When narrating displaced events, in the past and without contextual support, learners need to build semantic schema about the whole narrative which is not present before them; therefore, attention is devoted to achieving inter-propositional coherence, which slows down fluency considerably. Furthermore, Rahimpour (1999) points out, the cognitive demand imposes extra burden of information processing, memory capacity, and attentioal resources on learners` mental capacity which pushes the learners to go beyond their current level of language proficiency and stretch their interlanguage system,

Gilabert (2007) in his paper "manipulating task complexity" examined the effects of increasing task complexity on three areas of production (CAF) and got no results on fluency. Therefore, in terms of fluency it is in contrast with the current study.

One explanation for these discrepancies could be that fluency does not require attention in the same way that complexity and accuracy do. In other words, higher fluency is not the consequence of attention allocation policies, as complexity and accuracy would be, but the consequence of more efficient message" (Gilabert, 2005 as cited in Abdollahzade & Fard Kashani, 2011) thus the high rate of fluency in the written production can be attributed to the fact that increasing cognitive demand of pedagogic task has an important influence on learning (Rahimpour, 1999).

In the case of complexity, regarding to third null hypothesis (H_{03}), stating "task complexity (here-and-now versus there-and-then) does not have any effect on EFL learners' written fluency", a Wilcoxon Signed Rank Test was run to compare the two narratives of the subjects. The results demonstrated that the mean complexity values of the first task performance (simple task) (HN) increased to the second task performance (complex task) (TT).Then, since the significance level of task of complexity is less than 0.05 (significance level $p < .05$), this means that increasing task complexity had significant effect on complexity. Therefore, null hypothesis is confirmed.

This supports Skehan's (2009) model of limited attention in which accuracy is in competition with fluency and complexity. But in a similar vein, finding of this study ran against Robinson and Gilabert (2007) who claimed that increasing the cognitive demands of tasks, contributing to their relative complexity along certain dimensions, will lead to greater complexity of L2 production.

This study is in line with Robinson's Cognition Hypothesis who claims that learner's attention could be directed to both complexity and accuracy simultaneously without trade-off effects (as cited in Abdollahzade & Fard Kashani, 2011). Rahimpour (2007) also found that complex tasks led to more accuracy but less complexity than simple tasks.

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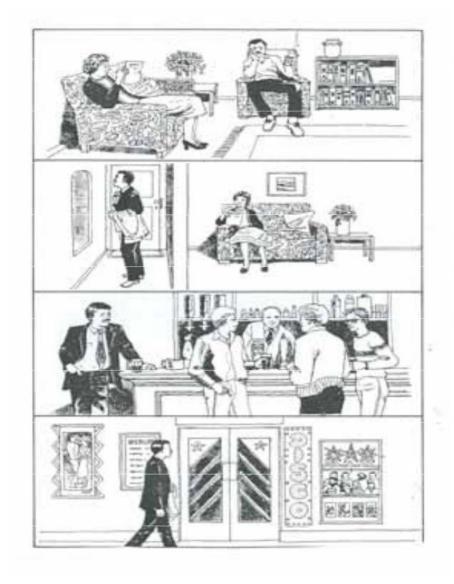
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Appendices

A.1: Picture Story of (Here-and-Now Task)
Adopted from *Teaching the Spoken Language (Brown & Yule, 1983)*

A.2: Picture Story of (There-and-Then Task)
Adopted from *Referential Communication Tasks* (Yule, 1997)

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