Indian Journal of Fundamental and Applied Life Sciences ISSN: 2231– 6345 (Online)
An Open Access, Online International Journal Available at www.cibtech.org/sp.ed/jls/2015/03/jls.htm
2015 Vol. 5 (S3), pp. 1284-1294/Samizad and Khodabandehlou
Research Article

IMPACT OF TASK COMPLEXITY ON IRANIAN EFL LEARNERS' SPEAKING FLUENCY AND ACCURACY

***Samereh Samizad and Morteza Khodabandehlou**
Department of TEFL, Guilan Science and Research Branch, Islamic Azad University, Guilan, Iran
**Author for Correspondence*

ABSTRACT
The present study was implemented to drive force behind task studies in the cognitive difficulty as Task Complexity to investigate the effect of Task Complexity on Iranian learners' speaking fluency and accuracy and find out if learners' attention can be selectively channeled to certain aspects of production in which they are lacking so as to strike a balance between the two areas of production, i.e., accuracy, and fluency. For this purpose among one hundred participants, forty intermediate were selected and homogenized by OPT- test. Then randomly divided and assigned into two groups, control group and experimental group. To answer the question of study both groups sat for pre-test of speaking to measure speaking ability. Control group approached existing method and received no treatment while experimental group received treatment based on Task complexity. Then groups sat for post-test speaking ability. At last the learners were assessed by fluency and accuracy measurement. The data of the study was wrong through T-test and independent sample T-test. It was explored form the study that Task complexity has significant effect on learners' speaking fluency and accuracy.

Keywords: *Task Complexity, Fluency, Accuracy, Speaking Skill*

INTRODUCTION
In a short period of time English displaced other languages and became the leading means of communication worldwide. So speaking, as a productive skill, seems intuitively the most important of all the four-macro skills because it can distinctly show the correctness and language errors that a language-learner makes. Because of the significant role of speaking, many researchers like Bailey (2005) and Goh (2007) have proposed methods to enhance speaking skills by means of syllabus design, teaching principles, types of tasks and materials, and speaking assessment. In recent years in SLA research there has been a considerable growth of interest in tasks.
Defining and determining task complexity (TC) is of central importance in task-based language teaching because with such knowledge educators can have a better understanding of task performance, design, and development. TC can also inform grading and sequencing decisions in a language teaching syllabus (Ellis, 2003; Skehan, 1998; Robinson, 2001). Robinson and Skehan make a series of predictions as to how changes in task complexity will affect the linguistic aspects of L2 output or, to be precise, the accuracy (i.e., correct use of the L2) and/or complexity (i.e., use of advanced and elaborate inter-language constructions) of production (Skehan& Foster, 2001).
The paper focused on the effects of cognitive task complexity on different dimensions on accuracy, and fluency of Iranian EFL learners' oral production to demonstrate the possibilities of enhancement of the speaking skills of students learning English. Robinson's Cognition Hypothesis (2005) and Skehan's Limited Attentional Capacity Model (Skehan & Foster, 1999, 2001) are two theoretical frameworks on which this study was based.
Theories of Task Complexity
Task-based research has concentrated mainly on learners' (mental) involvement in task completion process. What processes and how these processes take place inside learners' mind can be determined through completing a task. One of these processes which can play an important role in spoken language production is "information-processing". From the information processing approach to task-based research, task complexity can be defined through intrinsic complexity (cognitive factors), perceived difficulty (learner factors), and task completion condition (interactional factors).

Table 1.1: Similarities and differences between the Limited Attentional Capacity Model and the Triadic Componential Framework

Limited Attentional Capacity Model	Triadic Componential Framework
1. Code complexity	1. Task complexity
◦Vocabulary load and variety	Resource-directing
◦Redundancy and density	◦+/−Few elements
	◦+/−Here-and-Now
2. Cognitive complexity	◦+/−No reasoning demands
Cognitive familiarity	Resource dispersing
◦Familiarity of topic and its predictability	◦+/−Planning
◦Familiarity of discourse genre	◦+/−Single task
◦Familiarity of task	◦+/−Prior Knowledge
Cognitive processing	
◦Information organization	2. Task conditions
◦Amount of computation	Participation variables, e.g.,
◦Clarity and sufficiency of information given	◦Open/closed
◦Information type	◦One-way/two-way
	◦Convergent/divergent
	Participant variables, e.g.,
	◦Same/different gender
3. Communicative stress	◦Familiar/unfamiliar
◦Time limits and time pressure	◦Power/solidarity
◦Speed of presentation	
◦Number of participants	3. Task difficulty
◦Length of texts used	Affective variables, e.g.,
◦Type of response	◦Motivation
	◦Anxiety
	◦Confidence
	Ability Variables, e.g.,
	◦Working memory
	◦Intelligence
	◦Aptitude
◦Opportunities to control interaction	◦Anxiety
	◦Confidence
	Ability Variables, e.g.,
	◦Working memory
	◦Intelligence
	◦Aptitude

Robinson's Cognition Hypothesis: Robinson (2001) claimed 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. Regarding attentional resources, Robinson has proposed that the human brain has a multiple-resource attentional system, i.e., depletion of attention in one pool has no effect on the amount remaining in another.

Robinson's Cognition Hypothesis (2005), also known as Multiple Attentional Resources Model, states that human beings have unlimited attentional and memory resources which can be accessible whenever there is a need. The cognition hypothesis advocates the prediction that increasing cognitive task complexity which requires more attentional resources does improve language production qualities such as accuracy and complexity but not fluency. In this view, attention, as suggested by models such as Wickens' (1992), can draw on multiple resources. Robinson's Triadic Componential Framework

embraces two dimensions dealing with cognitive loading, "resource-directing dimensions", and "resource-dispersing dimensions".

Resource-directing dimensions include +/- few elements, +/- Here-and-Now, and +/- no reasoning demands. Resource-*directing* dimensions of complexity affect allocation of cognitive resources to specific aspects of L2 code. One of the main claims of Robinson's Cognitive Hypothesis is that increasing task complexity along resource-directing dimensions will be associated with *simultaneous* increases in complexity *and* accuracy, a claim which contrasts with Skehan's Trade-off Hypothesis prediction. The resource-directing dimensions of task performance call learners' attention to the linguistic features which are needed to meet task demands, whereas the resource-dispersing dimensions of the task act as attentional limitations in determining what aspect of the task can be heeded. The resource-dispersing dimensions include +/- pre-task planning time, +/- single task, and +/- prior knowledge.

The Cognition Hypothesis states that sequencing tasks from cognitively simple to complex allows students to progress towards successfully performing real-world target tasks.

Skehan and Foster's (2001) Limited Attentional Capacity Model: Another theoretical framework is Skehan and Foster's (2001) Limited Attentional Capacity Model. Unlike Robinson's model, Skehan and Foster's (2001) model proposes that all human beings have limited memory and attentional resources and when they are required to complete a cognitively demanding task, there will be some trade-off effects on different qualities (complexity, fluency, Human beings have and accuracy). If a task demands a lot of attention to its content (more complex task), there will be less attention available to its language forms and vice versa.

Statement of the Problem

One of the major issues for many teachers of English as a foreign language (EFL) is finding a way of helping foreign language learners to produce acute and fluent utterances. Some researchers observe that not enough time is given to various exercises and opportunities for the improvement of speaking ability. Students often complain of scolding, and discouraging by their teachers for not speaking correctly. Li (2003) holds that speaking remains the most difficult skill to master for the majority of English learners. Researchers so far found that the case is different from simple task to complex task performance. But the problem regarding task design is that whether learners' oral production will get better in terms of accuracy and fluency by the increase of the degree of task complexity or simpler task will lead to fluent and accurate oral productions.

Oral skills have hardly been neglected in EFL/ESL courses (witness the huge number of conversation and other speaking course books in the market), though how best to approach the teaching of oral skills has long been the focus of methodological debate.

Especially in Iran, improving fluency and accuracy is one of the considerable factors in learning English and the speaking skill is a critical part of language learning and the teaching process. While various Studies (e.g. Nuevo, 2006; Kim, 2009; Saeedi *et al.*, 2012; Zohreh and Soghra, 2012; Ghavamnia *et al.*, 2013) have carried out to inspect the effect of different task-based learning in EFL and shown an influential impact on the fluency and accuracy of oral performance, there is still debate over how to be fluent and accurate in speaking.

As the available literature shows, learning to speak English as a non-native language is uniquely difficult, especially at the initial and intermediate stages of learning, and often leaves the learners with no option but to resort to code-switching, thinking-for-speaking patterns and other ways of maintaining and repairing their speech and preventing communication breakdowns (Robinson and Ellis, 2008).

Research Questions of the Study

The following questions are posed for the research to answer:

1. Does Task Complexity have any effect on EFL learners' speaking fluency?
2. Does Task Complexity have any effect on EFL learners' speaking accuracy?

Hypotheses of the Study

Concerning these questions, the following hypotheses will drive the present study:

1. Task complexity does not have any effect on EFL learners' speaking fluency.

2. Task complexity does not have any effect on EFL learners' speaking accuracy.

Review of the Literature

A number of researchers investigated the problem of speaking skills and came to the conclusion about students' low level of speaking ability and their inability to speak confidently and fluently. Students who study English as a foreign language usually have limited opportunities to speak English outside the classroom (Zhang, 2009) and also limited exposure to English speakers or members of the international community. Thus, in recent years, a number of researchers and teachers have called for a move towards task-based language instruction (e.g. Skehan, 1998; Ellis, 2004).

In Bachman's influential discussion of communicative language ability (CLA) (Bachman, 1990; Bachman & Palmer, 1996), elements considered important to a learner's performance on a given language use situation are said to be cognitive knowledge of the second language, knowledge of how to overcome communication difficulties, knowledge of how to organize and plan a task, topical knowledge and learners' affective reactions.

In recent conceptualizations of foreign language aptitude, however, it is argued that different cognitive abilities might be useful in different phases and processes of language learning (Skehan, 2002) and that learners with different cognitive ability profiles might benefit from different types of learning tasks and instructional conditions (Robinson, 2005a). Previous studies on the effects of task complexity have largely addressed such issues as fluency and lexical complexity (Ong & Zhang, 2010), etc.

In another study, Nuevo (2006) explored how manipulating task complexity with regard to [± reasoning demands] variable affected L2 learning opportunities and development. In contrast to the prediction of Cognition Hypothesis no association was found between task complexity and L2 development. As for the occurrence of learning opportunities the study also bore mixed results.

In a recent study, Kim (2009) explored the effects of task complexity on the occurrence of LREs with a group of high and low proficiency learners. The researcher manipulated [± reasoning demands] and [± few elements] variables in two task types: picture narration and picture difference tasks. The results indicated that the effects of task complexity on the occurrence of LREs differed depending on task types and learner proficiency. This study only partially confirmed Robinson's Hypothesis.

Heidari-Shahreza *et al.,* (2012); studied the effects of manipulating task complexity on the occurrence of Language-related episodes during Learner-learner Interaction; The study bore mixed results; while in some versions of the tasks, complexity and the occurrence of LREs positively correlated, this pattern did not hold true for all the tasks and proficiency levels. Moreover, the observed increase was mostly in the number of lexical LREs than that of grammatical ones.

Although the contrasting or mixed findings of studies investigating task complexity in relation to Cognition Hypothesis; It seems more research is needed to investigate task complexity and learning language within the perspective of these two models and this is indeed the incentive behind this study.

MATERIALS AND METHODS

Methodology

Participants

One hundred of Iranian language learners at intermediate level at Iranian language institute in Bandar-e-Anzali served as the primary participants of this study. The participants aged from 18 to 30. For the purpose of homogenizing the participants, they were initially tested using the Oxford placement test. Choosing intermediate level participants (those who answered between34 to 37 of the whole questions correctly), the number of the participants was reduced to 40 and selected randomly for the main study. These 40 participants (homogenized in terms of both linguistic knowledge and oral proficiency) were used as the main participants of the study. Then they divided into two groups, control and experimental groups.

Material

The following instruments were utilized in this study to gather data on the participants' linguistic level and oral proficiency.

- *The Oxford placement test:* The Oxford placement test filtered the participants and homogenized them in terms of proficiency level. This test includes 50 items on the grammatical structures and the participants will be allowed 25 minutes to complete it. It gives the instructors the information they need to find out about a person's language level.
- *IELTS speaking test:* Participants finally underwent the pre-test and post-test using IELTS speaking part one (questions based on personal information), parts 2 and 3 conducted by two different trained and instructed interviewers. The interviewees were first given an IELTS speaking prompt card and a minute to think and take notes on the cards' content. They were then asked to speak about the subject for 2 minutes (part 2). After approximately two minutes, the interviewer would start a related discussion on the same prompt with the interviewee (part 3).

Procedure

As a result of this test, 40 learners were homogenized and selected as the main participants of the present study. Then the participants were selected and randomly assigned to divide into 20 students for control group and 20 students for experimental. Then, they sat for pre-test to measure their speaking ability. Control group received no treatment and experimental group received treatment based on Task complexity. Picture narration tasks were employed in the study based on Robinson's task complexity criteria. The structured narrative task used in this study consisting of some picture strips was taken from Quino (Salvador, 1985). This type of task was chosen for a number of reasons. First similar tasks have been used in other studies (e.g. Robinson (2001a); Nuevo (2006); Kim (2009); Heidari-Shahreza *et al.*, (2012)) and thus comparison with the results of these studies would be easier.

Second, this task is mono-logic rather than dialogic; it offers a basis for deriving measures of learner performance that are not influenced by interactional variables. It was, furthermore, hypothesized to require different levels of attention on participants, with progressively less familiar and less predictable information causing an increasingly cognitive load and, as a consequence, influencing performance on the task (Foster and Skehan, 1996). The procedure through which experimental group received treatment is as follows:

At first a set of selected picture pages were given each of students. Students should create story by reordering the pictures. As for the picture narration tasks, the participants were asked to narrate a comic story based on not already-sequenced. Hence the participants had to first put them in order and secondly narrate the story. The class was given 15 minutes to create to brainstorm them and they could write up or make the story in their mind orally.

In this way, [± reasoning demands] factor of the tasks were manipulated. After that, each student was asked to come to the front and tell his story to the class. Students were asked to edit their stories. It was encouragement to students to expand the stories to make them more interesting for others to read. Each student could comment on story and discuss it. Each student would come up with a unique story (Everyone would enjoy listening to them.)

The whole project toke for 10 sessions, each session for one hour and finally both groups sat for post-test of speaking to explore the effectiveness of speaking treatment program. Then as and post-test(like pre-test), they were interviewed orally using two different IELTS speaking test .Their speaking was recorded to be listened to and rated later.

Data Analysis

Fluency was measured by Error free per minute of speech (Skehan & Foster, 1999).

To code accuracy, following the studies of Rahimpour (1997, 2008), Errasti (2003), Wigglesworth (1997) and Larsen- Freeman (2006), it was operational as the number of Error- free T-units i.e., the percentage of T-units that do not contain errors. The data was analyzed through measuring SPSS, a T-test and in-depended sample T-test were used to analyze the study.

RESULTS AND DISCUSSION

The first research question pertained to the effect of task complexity on intermediate EFL learners' accuracy of speaking ability. For this purpose, results obtained from the two groups were compared in

terms of accuracy. With respect to the measures of accuracy, descriptive statistics of the two groups were obtained (as shown in table 4.1).

Table 4.1: Descriptive statistics of accuracy for post-test scores

	Groups	N	Mean	Std. Deviation
Error-free clauses	Control	20	47.23	3.84
	Experimental	20	52.12	4.43
Correct Verbs	Control	20	42.50	3.26
	Experimental	20	46.67	4.81

In order to test the first hypothesis, Independent sample t-test was run to examine the possible differences among the two groups. Table 4.2 shows that there isn't a statistically significant difference in the test of equality of variances of the two groups ($p>0.05$). However, it shows that there is a significant difference in the means of the two groups in terms of accuracy ($p<0.05$).

Table 4.2: Descriptive statistics of accuracy for experimental and control groups on post-test

		Levene's Test Equality of Variances		fort-test for Equality of Means			
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference
Error-free clauses	Equal variances assumed	.663	.420	-3.725	38	.001	-4.890
Correct Verbs	Equal variances assumed	3.396	.073	-3.206	38	.003	-4.170

**Note: p< 0.05*

Concerning accuracy, participants' performance in experimental group was more accurate than their counterparts in control group (M=52.12, M=47.23 for error-free clauses and M=46.67, M=42.50 for correct verbs, respectively for experimental and control group). In other words, task repetition and task structure significantly assisted learners' accurate L2 production. Figures 4.1 and 4.2 show the mean of error-free clauses and correct verbs of post-test scores for experimental and control group.

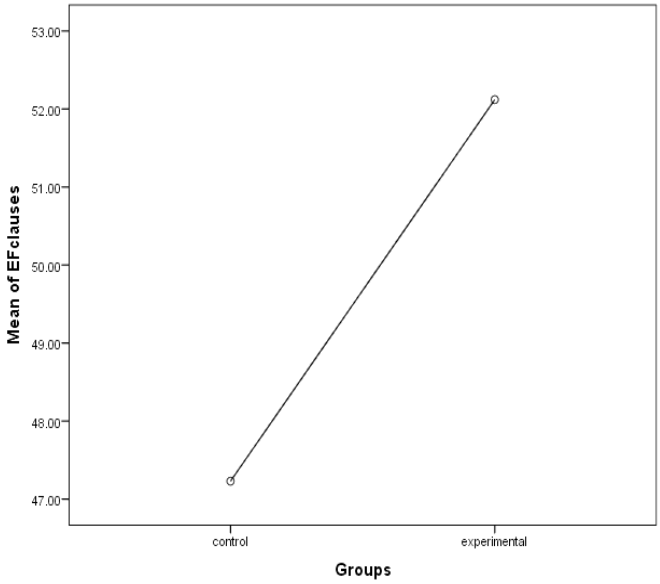

Figure 4.1: Mean of Error-free clauses for post-test scores of the two groups

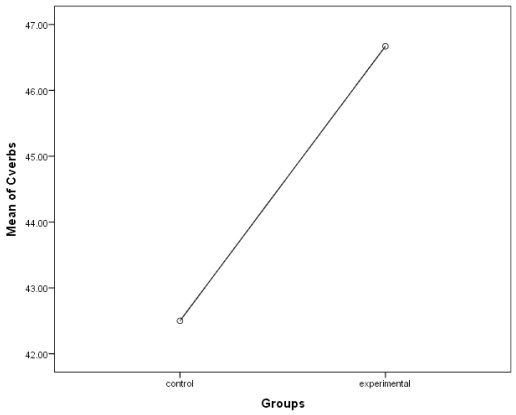

Figure 4.2: Mean of correct verbs for post-test scores of the two groups

Concerning second research question which was to explore the influence of task complexity on fluency of speaking ability, to provide a plausible answer, performances of the two groups were compared in terms of fluency. With respect to the measures of fluency, descriptive statistics of the groups were obtained (as is shown in table 4.3).

Table 4.3: Descriptive statistics of fluency for post-test scores

	Groups	N	Mean	Std. Deviation
RateA	Control	20	82.14	2.85
	Experimental	20	91.37	3.80
RateB	Control	20	77.29	3.76
	Experimental	20	85.25	4.34

Table 4.4: Descriptive statistics of fluency for experimental and control groups on post-test

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference
RateA	Equal variances assumed	1.039	.315	-8.687	38	.000	-9.23
RateB	Equal variances assumed	.837	.366	-6.193	38	.000	-7.96

**Note: p<0.05*

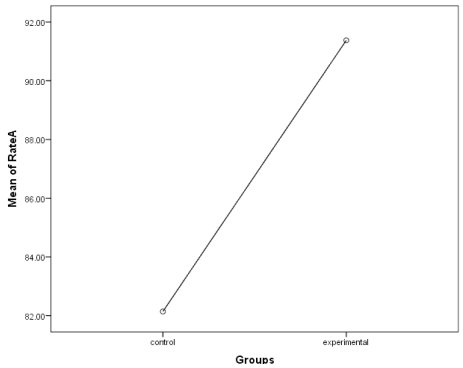

Figure 4.3: Mean of Rate A for post-test scores of the two groups

In order to test the second hypothesis, Independent sample t-test was run to examine the possible differences among the groups. Table 4.4 shows that there isn't a statistically significant difference in the

test of homogeneity of variances of the two groups in terms of fluency ($p>0.05$). It also shows that there is a significant difference in the means of the two groups in terms of fluency ($p<0.05$). Figures, 4.3 and 4.4 show the mean of Rate A and Rate B of post-test scores for two groups.

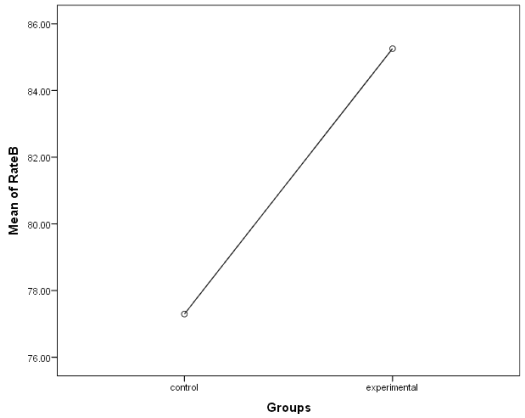

Figure 4.4: Mean of Rate B for post-test scores of the two groups

The findings showed that the mean score of experimental group is higher than the control group (M= 91.37, M=82.14 for Rate A and M=85.25, M=77.29 for Rate B, respectively for experimental and control group). Therefore, task complexity significantly assisted learners' fluent L2 production. Hence, it is safe to argue that task complexity enhance fluency of oral L2 production.

Conclusion

In this research the effect of task complexity on the fluency and accuracy was investigated in type of picture narration task, which was administered orally to 40 intermediate Iranian learners of English. Motivated by Skehan's Trade-Off Hypothesis and Robinson's Cognition Hypothesis to reveal how picture narration varies in task of cognitive complexity in learners' spoken output.

This finding can be interpreted the picture narration task forced differential memory demands on learners from those of the +/- reasoning task, as the participants in the experimental groups had to commit the story to their memory by ordering pictures and subsequently retrieve it from their memory so that they were able to generate a coherent narrative. This may have pushed them to ponder on the storyline of the picture set, to infer the link between events, and to make larger pieces of information to ease memory encoding, storage, and retrieval, thereby implicating deeper semantic processing (Robinson, 1995).

Although the higher memory demands brought to bear by the +/- reasoning task may have induced learners to try to retrieve the storyline and to cohere a text together, thereby implicating deeper semantic processing and creating more elaborated semantic representations, this mental effort after understanding meaning seemed to have been more directed at mobilizing more cutting-edge knowledge of grammar.

Consequently, it might increase learners' understanding of task complexity, if the cognitive demands of tasks were also considered separately for the conceptualization and linguistic encoding stages of speech production. Resource-directing and resource-dispersing have received mixed support, which is probably due to the fact that in some tasks, certain characteristics make resource-dispersing attentional demands on learners, whereas others simultaneously draw their attention to certain linguistic aspects of performance. Increasing complexity along resource-dispersing dimensions, however, depletes learners' attention without having the beneficial effect of directing it to any specific linguistic aspect of L2 production.

The results provide strong confirmation of Cognitive Hypothesis. Few studies have examined systematically the combined effects of resource-directing and resource-dispersing variables on performance (Gilabert, 2005, Iwashita *et al.*, 2001; Revesz, 2009) although in real-world communicative tasks these two dimensions simultaneously affect performance (Pallotti, 2009).

The findings of the present study endorsed the notion that the lesser memory demands triggered by the +/- reasoning task would go a long way in fostering fluency of production in terms of length of text and the

number of dysfluencies. In general terms, the present study demonstrated that task complexity influenced L2 spoken narrative production in terms of both quantity and quality. Quantitatively, cognitive complexity led to fluency gains. Therefore, accuracy and fluency seem to have been in competition for attention with no deteriorating effects for fluency. This runs counter to Robinson's (2001a, 2001b) claim that fluency and accuracy/complexity are in competition for attention.

Findings indicate that the participants were more accurate and used more varied vocabulary than in control group. The effect of task on performance differed in the two modes. In experimental group, however, the picture narration task elicited syntactically more complex language than control group. In general, learners also regard increasing task complexity as having a positive effective on the occurrence of more learning opportunities during task-based interaction, which is in line with the empirical findings of the study. Furthermore, although learners experimental and control group performed differently in some aspects.

This finding seems more compatible with the Cognition Hypothesis than the Trade-Off Hypothesis. That is to say in some versions of the tasks, there were positive effects between task complexity and the fluency and accuracy (supporting Cognition Hypothesis). But the findings of the current study bore mixed results without fully confirming either of the above-mentioned models, which is somehow in line with the previous studies (Nuevo, 2006; Kim, 2009).

This suggests that varying instructional tasks in classroom settings as well as tasks used in language assessment is essential in order to give learners with different cognitive profiles equal chances to perform to the best of their potential.

ACKNOWLEDGEMENT

I would like to humbly thank my supervisor, Dr. Morteza Khodabandehlou, a gracious mentor for his cooperation, guidance and for his invaluable support in the preparation and writing of the survey items, for which I am extremely grateful and I would like to express my very great appreciation of EFL students who helped me with conducting this research.

REFERENCES

Bachman LF (1990). *Fundamental Considerations in Language Testing* (Oxford: Oxford University Press).

Bachman LF and Palmer AS (1996). *Language Testing in Practice* (Oxford: Oxford University Press).

Bailey KM (2005). *Practical English Language Teaching: Speaking* (New York: McGraw-Hill).

Ellis R (2003). *Task-based Language Learning and Teaching* (Oxford: Oxford University Press).

Ellis R (2004). *Task- based Language Learning and Teaching* (Oxford: Oxford University press).

Errasti MPS (2003). Acquiring writing skills in a third language: The positive effects of bilingualism. *International Journal of Bilingualism* **7**(1) 27- 42.

Foster P and Skehan P (1996). The influence of planning and task type on second language performance. *Studies in Second Language Acquisition* **18** 299–323.

Ghavamnia M, Tavakoli M and Esteki M (2013). The effect of pre-task and online planning conditions on complexity, accuracy and fluency on EFL learners' written production. *Porta Linguarum* **20** 31-43.

Gilabert R (2005). *Task complexity and L2 narrative oral production* (Unpublished Ph. D. Dissertation). Barcelona, Universitat de Barcelona, Spain.

Goh C (2007). Teaching speaking in the language classroom. Singapore: SEAMEO Regional Language Centre.

Heidari-Shahreza MA, Dabaghi A and Kassaian Z (2012). The effects of manipulating task complexity on the occurrence of language-related episodes during learner-learner interaction **9**(2) 173-188.

Iwashita MN and Elder (2001). Can we predict task difficulty in an oral proficiency test: exploring the potential of an information processing approach to task design. *Language Learning* **51** 401-436.

Kim (2009). Questioning the stability of foreign language classroom anxiety and motivation across different classroom contexts **42**(1) 138–157.

Larsen- Freeman D (2006). The emergence of complexity, fluency, and accuracy in the oral and written production of five Chinese learners of English. *Applied Linguistics* **27**(4) 590- 619.
Li R (2003). Factors that Chinese Students Believe to Affect Their Oral Fluency. *Teaching English in China* (Foreign Language Teaching and Research Press) Beijing **52** 23-27.
Nuevo AM (2006). Task complexity and interaction: L2 learning opportunities and development. DOI: 10.13140/RG.2.1.5160.0807
Ong J and Zhang LJ (2010). Effects of task complexity on fluency and lexical complexity in EFL students‟ argumentative writing. *Journal of Second Language Writing* **19** 218-233.
Pallotti G (2009). CAF: Defining, refining and differentiating constructs. *Applied Linguistics* **30** 590-601.
Rahimpour M (1997). *Task condition, task complexity, and variation in L2 discourse* (Unpublished Ph.D. dissertation). University of Queensland, Australia.
Rahimpour M (2008). Implementation of task- based approaches to language teaching. *Research on Foreign Languages Journal of Faculty of Letters and Humanities* **41** 45- 61.
R´ev´esz A (2009). Task complexity, focus on form, and second language development. *Andrea R´ev´esz* 181 *Studies in Second Language Acquisition* **30** 437–470.
Robinson P (1995). Task complexity and second language narrative discourse. *Language Learning* **45** 99–140.
Robinson P (2001). Task complexity, cognitive resources, and syllabus design: A triadic frameworkfor examining task influences on SLA. In: *Cognition and Second Language Instruction*, edited by Robinson P (Cambridge University Press) 287-318.
Robinson P (2001a). Task complexity, task difficulty, and task production: Exploring interactions in a componential framework. *Applied Linguistics* **22** 27–57.
Robinson P (2001b). Task complexity, task difficulty, and task production: Exploring interactions in a componential framework. *Applied Linguistics* **22**(1) 27-57.
Robinson P (2005). Cognitive complexity and task sequencing: Studies in a componential framework for second language task design. *International Review of Applied Linguistics* **43** 1–32.
Robinson P (2005a). Aptitude and second language acquisition. *Annual Review of Applied Linguistics* **25** 45-73.
Robinson P and Ellis N (2008). Conclusions: Cognitive linguistics, second language acquisition and L2 instruction—Issues for research. In: *Handbook of Cognitive Linguistics and Second Language Acquisition*, edited by Robinson P, Gilabert R and Ellis NC (New York/London: Routledge) 489–545.
Saeedi M, Ketabi S and Rahimi Kazerooni SH (2012). The Impacts of Manipulating Task Complexity on EFL Learners' Performance. *GEMA Online™ Journal of Language Studies* **12**(4) 1057-1075.
Salvador J (1985). *Quinoterapia* (Barcelona: Lumen).
Seifoori Z and Goudarzi S (2012). The Effect of the Oral Production on Grammatical Accuracy and Task-based Fluency in Speach of Iranian. *EFL Learners* **5**(18) 54-66.
Skehan P (1998). *A Cognitive Approach to Learning Language* (Oxford University Press).
Skehan P and Foster P (1999). The influence of source of planning and focus of planning on task- based performance. *Language Teaching Research* **3** 215-247.
Skehan P and Foster P (2001). Cognition and tasks. In: *Cognition and Second Language Instruction,* edited by Robinson P (Cambridge: Cambridge University Press) 183–205.
Skehan P (2002). Theorising and updating aptitude. In: *Cognition and Second Language Instruction,* edited by Robinson P (Cambridge: Cambridge University Press) **25** 69-93.
Wickens C (1992). *Engineering Psychology and Human Performance,* 2nd edition (New York: HarperCollins).
Wiggleworth G (1997). An investigation of planning time and proficiency level on oral test discourse. *Language Testing* **14**(1) 85-106.
Zhang Y (2009). Reading to speak: Integrating oral communication skills. *English Teaching Forum* **47**(1) 32-34.

Research Article

Treatment