

Application of Task Complexity Along +/- single Task Dimension and its Effect on Fluency in Writing Performance of Iranian EFL Learners

Siros Izadpanah, Ph.D., Department of English Language Teaching, Zanjan Branch, Islamic Azad University, Zanjan, Iran
cyrosizadpanah@yahoo.com

Esmail Shajeri, M.A., Islamic Azad University, Science and Research Branch, Zanjan, Iran
esmaeilshajeri@yahoo.com

Abstract

In the present study, two different models of task complexity; namely, limited attentional capacity model and cognition hypothesis were examined. To this end, the manipulation of cognitive task complexity along +/- single task dimension on Iranian EFL learners' production in terms of fluency was explored. Based on the results of the writing test of TOFEL (2004), 48 learners were selected as the participants of the study and were divided into two groups, simple task group (*STG*, $n=24$) and complex task group (*CTG*, $n=24$). The participants in the *STG* were given an eight-frame picture which had been arranged in the correct sequence before its administration (+ single task). The participants in the *CTG* were given all the eight frames which were not arranged in their correct order. These participants were required to order the frames in the right sequence first, before starting writing (- single task). Their output was encoded based on the measure of fluency. One independent sample t-tests was run. The results indicated that the participants significantly generated more words in the complex task. Based on the findings, it can be concluded that in the Iranian context, the predictions of limited attentional capacity model were more accurate.

Key words: Cognitive task complexity, +/- Single task dimension, fluency, cognition hypothesis

Introduction

Many contemporary researchers, language teachers, material developers, and syllabus designers have directed their attentions to Task-Based Language Teaching (TBLT). It emphasizes the transactional and interactional use of language (Brown & Yule, 1983). The main strong claim of this approach is that this approach can activate the cognitive and acquisition processes while learners are busy performing tasks and accomplishing its goal (Skehan, 2003). However, the important point is that the developmental and acquisition processes are engaged in the development of both form and meaning simultaneously, while TBLT primarily concerns with meaning conveyance.

An effective syllabus in TBLT can assist in developing a balanced interlanguage. The unit of syllabi in TBLT is tasks. Tasks are nowadays "the potential building blocks of second language instruction" (Richards & Rodgers, 2001, p. 223), and knowing their exact nature is of paramount importance. Various definitions have been proposed by different experts (such as Bachman & Palmer, 1996; Breen, 1989; Bygate, 1999; Bygate, Skehan, & Swain, 2001; Crookes, 1986; Lee, 2000; Long, 1985; Nunan, 1989; Richards, Platt, & Weber, 1985; Skehan, 1996, 1998; Swales, 1990). Skehan (1996) defines a task as "an activity in which meaning [rather than form] is primary, [and] there is some sort of relationship to real-world activities, task completion has some priority, and assessment of task performance is in terms of task outcome" (Skehan, 1996, p. 38) "not in terms of language display" (Skehan & Foster, 1999, p. 94). Tasks also can enhance the cognitive processes required for the development and acquisition of L2 (Robinson, 2003).

The most challenging question arises that what is the best criterion for sequencing tasks. Cognitive approaches, whose focus is on the information processes occurring inside the mind while learner tries to learn L2 (Skehan, 1998), introduce cognitive task complexity as the criterion, due to the fact that learners generate an internal syllabus which is developed heedless of the instruction they receive and the best instruction and syllabus are the one which is compatible with this internal cognitive syllabus (Corder, 1981). Cognitive task complexity is defined while as the inherent cognitive demands of the tasks imposed on the learners by the structure of the tasks (Robinson, 2001a). Generally, based on this 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). Hence; the present study was designed to highlight this issue by concentrating on one of the dimensions, in the Robinson's (2005) triadic framework, which has not been fully investigated yet, i.e., +/-single task, and its role and effect on fluency in writing performance of Iranian EFL learners.

Review of Literature

Historically, and in general usage still, the term fluency has been used to refer to a learner's or user's global language proficiency ,particularly as characterized in term of the ease-eloquence ,smoothness and native-like of speech or writing(Chambers1997;lennon 1990). Many L2 researchers however, now adhere to a more narrow definition of fluency (Lennon 2000) and furthermore agree that fluency in itself is also multidimensional. Following Skehan (2003,2009;Tavakoli & Skehan, 2005), at least three sub dimensions of fluency can be distinguished: speed fluency(rate and density of linguistic units produced),break down fluency(number, length and location of pauses),and repair fluency(false starts, miss formulations, self-correction and repetitions).

Tasks, as the main units of TBLT, are strongly claimed to be graded in syllabi based on their various characteristics (Robinson, 2001a, 2005, 2007a; Skehan, 1998, 2003). Gilabert (2004) and Robinson (2005) declare that the best criterion for such sequencing in a principled way is cognitive task complexity which is “the result of intentional, memory, reasoning, and other information processing demands imposed by the structure of the task on language learner” (Robinson, 2001a, p, 29); therefore, it pertains to the degree of cognitive demands that the task imposes on the learners while doing the task (Ellis, 2003). Robinson (2005) states “pedagogical tasks [should] be sequenced for learners on the basis of increases in their cognitive complexity” (p. 1) and strongly recommends cognitive complexity as the “theoretically motivated, empirically substantiable, and pedagogically feasible sequencing criteria” (Robinson, 2001a, p. 27) for the purpose of assisting learners in developing a balanced interlanguage regarding accuracy, fluency, and complexity. Many experts (Ellis, 2003, 2008; Robinson, 2005, 2007a, 2007b; Schmidt, 2001; Skehan, 1996, 1998, 2003; VanPatten, 1996, 2007; Wickens, 2007) in cognitive issues referred to *memory* and *attention* as the most important factors in cognitive processes.

Memory in cognitive processes

Three types of memory are identified (Ellis, 2008):

Sensory memory: it maintains the perceived data for a very short time in an iconic or echoic manner;

Working/short-term memory: the main processes of attention, perception, and rehearsal are accomplished in this memory in order for the data to be ready to store in an organized manner in the long-term memory, and the limited capacity of working memory hinders the proper information processing, therefore, with regard to language production or comprehension,

learners cannot cope with all aspects in the input or output instantaneously, and as a result, they are propelled to overlook some dimensions;

Long-term memory: the analyzed data are stored in this memory. There are two different systems in this memory (Skehan, 1998). The *exemplar-based system* consists of large number of ready-made chunks and formulaic units. These units are stored as a whole and their components are not analyzed grammatically while retrieved. The components of this system are useful in the real-time production; since their retrieval is not required any controlling analysis and they are summoned as a whole. So, the major benefit of this system is their quick accessibility (Widdowson, 1989) in the real time performance. It is more related to meaning and meaning conveyance (i.e., fluency). The *rule-based system* is more concerned with underlying rules of the input or the chunks they have already stored in mind. This system “consists of underlying rules which have been induced from the stimulus material and then become the basis for generalization and transfer” (Skehan, 1998, p.53). This system is related to the analyzability (Widdowson, 1989) of the material.

Attention in cognitive processes

Attention is “a cognitive process involving the ability to select and focus on particular stimuli from the environment while ignoring others” (VanPatten & Benati, 2010, p. 65). Recently, what draws a lot attention to itself is Schmidt’s (2001) *noticing hypothesis*. In its strong version, it states “although unattended stimuli may have subtle but undeniable effects on humans (as in subliminal perception experiments), it is widely argued in psychology that learning without attention to what is to be learned is impossible” (Hulstijn & Schmidt, 1994, p. 17). In other words, this theory declares that in order to learn, learners’ conscious attention is required. In fact, “awareness at the level of noticing” (Schmidt, 1990, p. 134) is a critical condition for acquisition.

Two models of attention are propounded:

Single-resource model of attention: The assumption of this model is that the whole processing capacity is “a *single* ‘pool’ of resource” (Wickens, 2007, p. 185); therefore, it can be stated that human beings can deal with just one task at a time, and attending to more than one task would be very awkward and sometimes impossible for them. As a result, when they face a challenging task, more attentional capacity of this single resource would be occupied and consumed for the accomplishment of that, and greater pressure would be imposed on attentional capacity. Regarding language learning, while producing language, learners cannot focus on all three aspects of language production, namely, accuracy, fluency, and complexity (Skehan & Foster, 1999). As VanPatten (1996, 2007) declares, while doing some tasks, learners’ first attention is on the meaning and content words in input processing, or as Skehan (1998) articulates, on the retrieval of words from the exemplar-based system in language production. So, the dominant focus would be on fluency, while learners are doing a task, at the expense of other aspects of production. This is due to the learners’ controlled processing, unlike the native speaker whose processing is mostly automatic, which can overwhelm their attentional resources (Skehan & Foster, 2001). This model of attention is mostly advocated by VanPatten (1990, 2002, & 2007) and Skehan (1996, 1998).

Multiple-resource model of attention: The other, different, view of attention, being supported by Robinson (1995a, 2001a, 2001b, 2005, 2007a, & 2007b) and Wickens (1980, 2002, 2007), is that attentional capacity is not a container with one single resource, but it is comprised of multiple resources, and depending on resource demands, resource similarity, and allocation policy between the two tasks (Wickens, 2007), human beings utilize one or more than one resources without any interference occurs. Four types of resources are introduced by Wickens

(2007) as follows: processing stages (perception/ cognition [encoding & central processing]/ responding distinction), processing modalities (visual/auditory distinction), processing codes (verbal/spatial distinction), and processing response (manual/vocal distinction).

Models of task complexity

Two different models have been propounded regarding the effect of task complexity on the learners' performance:

Skehan's Limited Attentional Capacity Model: In this model, Skehan, advocating the single-resource model of attention and proposing dual-mode of processing in which the learners activate both rule-based and exemplar-based systems to different degrees based on the requirements of the tasks, it is claimed "learners cannot attend to everything equally" (Skehan & Foster, 1999, p. 96) and concurrently. As a result, based on the demands of the present context, they prioritize one aspect (for example, the exemplar-based system) over another dimension (such as the rule-based system).

According to their model, tasks are meaning based activities; therefore, the dominant attention would be devoted to the fluency and rapid retrieval of ready-made chunks from exemplar-based system. When learners feel they cannot solve the problem just through the exemplar-based system, they utilize their rule-based system; hence, due to various reasons such as task conditions, personal characteristics, or learning and cognitive styles, the remaining attention would be devoted to increase the accuracy or complexity of their production. To put it in other terms, when the cognitive complexity of the task is increased, it is more probable that the learners call even more attention to the meaning conveyance and enhancing their fluency for the purpose of accomplishing the task goal successfully. Since the attentional capacity is limited and is a single pool with the dominant space occupied by the fluency, the leftover attention can be devoted to either accuracy or complexity, so, just one of them can be improved at the expense of the other. On the whole, this model predicts that boosting the complexity of the task would bring about greater fluency along with either greater accuracy or complexity (+fluency, -accuracy, +complexity or +fluency, +accuracy, -complexity).

Robinson's Cognition Hypothesis: Robinson (2001a, 2005, 2007a, & 2007b), like Wickens (1980, 2002, 2007), advocates the multiple resources model of attention. In his model, he argues that attention can be allocated to various tasks if they do not belong to the same domain. According to this model, there are various resource pools, rather than just one resource pool, and there is no general limitation on utilizing the pools simultaneously; hence, what occurs is switching attention from one resource pool to another, not prioritizing attention; to put it in Robinson's (2001b) terms, it is "an executive/action control problem" (p. 307), not a "capacity problem" (p. 307). He declares models of attention no longer focus on its limited capacity. In his model, what Robinson (2001a, 2005) pin points is that the augmentation of the task complexity would increase the processing load and this processing would lead to less fluent language; however, this can be compensated by "using specific features of the language code" (Robinson, 2001a, p. 31). This is in line with what Givon (1985) declares, "structural complexity tends to accompany functional complexity" (p.1021). To put it simply, the increase in the cognitive complexity of the task would result in the learners' spending substantial attention on the syntactic aspects of their performance, i.e., accuracy and complexity, on the other hand, in the learners' drawing less attention to the meaning and fluency of their language. To sum up, according to cognition hypothesis, if the complexity of the task boosts, based on the procedure of complexification, two different results would come up: either -fluency, +accuracy, +complexity, or -fluency, -accuracy, -complexity.

Robinson's Triadic Componential Framework

Based on the cognition hypothesis, Robinson (2001b) introduces a framework consisting of three dimensions; namely, task complexity, task difficulty, and task condition. Table 1 indicates this triadic framework.

Table 1. Robinson's (2005, p. 5) Triadic Componential Framework

<i>Task complexity</i> (Cognitive factors)	<i>Task conditions</i> (Interactional factors)	<i>Task difficulty</i> (Learner factors)
(a) resource-directing variables e.g., ±few elements	(a) participation variables e.g., open/closed	(a) affective variables e.g., motivation
±Here-and-Now ±no reasoning demands	one-way/two-way convergent/divergent	anxiety confidence
(b) resource-dispersing e.g., ±planning ±single task ±prior knowledge	(b) participant variables e.g., same/different gender familiar/unfamiliar power/solidarity	(b) Ability variables e.g., working memory intelligence aptitude

Note. "Cognitive complexity and task sequencing: Studies in a componential framework for second language task design," by P. Robinson, P. , 2005, *IRAL*, 43.

As Table 1 presents, one of the dimension is task conditions under which the tasks are accomplished. This concerns the interactive demands of accomplishing tasks. It is comprised of two subparts: participation variables regarding the information-flow (e.g. one-way vs. two-way) and participant variables with respect to familiarity or gender.

The other dimension is task difficulty which is "learners' perceptions of the demands of the task, and is dependent on differences between learners in the cognitive factors (e.g., aptitude, working memory) and affective variables (e.g., anxiety, confidence) that distinguish one learner from another" (Robinson, 2003, p. 56). This aspect pertains to the learner factors and the way learners perceive the difficulty of the task (Robinson, 2001a, p. 31); therefore, it is an inter-learner variable.

The other major dimension in this framework is task complexity which is defined as "the intrinsic cognitive demands of the task which can be manipulated during task design" (Robinson, 2003, p. 55). These processing demands are imposed by the structure of the tasks on the learners (Robinson, 2001a); therefore, through empirical investigation, it is possible to determine the specific structure of the tasks and predict their potential effect on the learners' performance beforehand. This dimension is an intra-learner variable. Robinson (2001a, 2001b, 2005) predicts increasing the complexity along the Resource-directing variables would bring about less fluency and great complexity and accuracy, i.e., -fluency, +accuracy, +complexity since these dimensions would direct learners' attentional and memory resources to L2 system in order to understand and convey the functional complexity, as a result, their attention to L2 grammaticisation (i.e., accuracy and complexity) in those conceptual domains would increase (Robinson, 2007b) to the detriment of fluency. On the other hand, tasks manipulated along the resource-dispersing dimensions do not "direct learners to any particular aspects of language code" (Robinson, 2005, p. 22) and would give rise to less fluency, accuracy, and complexity, i.e., -fluency, -accuracy, -complexity.

Research Hypothesis

The present study was designed to investigate the following null hypothesis:

H01. Manipulation of task complexity along single task dimension does not affect the written production of Iranian EFL learners regarding fluency.

Method

Participants

Eighty five upper-intermediate students, who had been enrolled in Zanjan English Language Department, took part in the study. They were chosen among males and females, their age ranged from 16 to 25. The proficiency level of the subjects was intermediate. In order to check the homogeneity of the subjects they took Writing Proficiency section of TOFEL (Educational Teaching Service, 2004). The scores obtained from 48 students were one standard deviation below and above the mean (+/-1 SD), and consequently they were considered to be at the same writing proficiency level and thus took part in this study. The selected participants were assigned to two groups, simple task group (STG) (n=24) and complex task group (CTG) (n=24).

Instruments

In this study three instruments were used for data collection phase. The Test of English as a Foreign Language (TOEFL, EST, 2004), as a renowned standardized language proficiency test, was the first instrument applied at the beginning of the study to evaluate the homogeneity of their writing proficiency level. However, just the writing section was used, since in this study the researchers' primary attention was paid to the writing performance of the students, for as Cooper (1984) argues, "if the purpose is to explore the learners' writing abilities, it is required to concentrate on this skill exclusively, and general proficiency tests is not good indicators of this skill since they more concern recognition and comprehension than production and generation, and comprehension process can be partly separated from the underlying syntactic system and from production" (Skehan, 1998, p. 15).

In this pretest, the subjects were required to write about the following topic in 35 minutes.

Do you agree or disagree with the following statement? Use reasons and examples to support your opinion.

"Should boys and girls go to separate schools?"

The Narrative task was the next instrument which was utilized. It was related to an eight-frame picture (Appendix A), and taken from Yule (1997). It was used in both the simple and complex narrative tasks but in different manners. Narrating stories are tasks "supported by visual material, but which require some degree of organization of material to tell a story effectively" (Skehan & Foster, 1999, p. 98). The task used in this study was a one-way task with no interaction among the participants (Ellis, 2003), and consisted of "a clear time line, a script, a story with a conventional beginning, middle, and end" (Tavakoli & Skehan, 2005, p. 246). The participants were supposed to narrate the picture using at least 150 words. The picture set was available for them at the time of performing the task, hence, both tasks used in the present study were deemed as contextual embedded (Cummins, 1983, cited in Ellis, 2003, p. 92) and immediate (Skehan, 1998), *Here-and-Now* orientation (Robinson, 2005).

The story was as follows: a woman goes to a supermarket. In the supermarket, she runs into her friend who was shopping with her little son. She starts talking with her. They get so engrossed in talking that they overlook the child. The child is very naughty. He stretches out his hand, takes a bottle, and puts it in the other woman's bag. Two women say good-bye and separate. The poor lady who does not know what is going on does not pay for the bottle. Therefore, one of the workers sees the bottle in her bag and accuses her of stealing; as a result, she was taken into custody.

The scoring profile (Appendix A) devised by Jacobs, Zinkgraf, Wormuth, Hartfeil, and Hughey's (1981, cited in Weigle, 2002) was the third instrument. It was used to score the participants' written output in the pretest. This scoring profile lays emphasis on "the *distinguishing characteristic* of communicative language use – interaction between the language user, the context, and the discourse" (Bachman, 1990, p.302). It is comprised of five components including content, vocabulary, language, organization, and mechanics. According to the profile, the score ranges from 34 to 100.

Procedure

In order to check the homogeneity of the participants regarding writing proficiency level, the writing section of the TOEFL (2004) was selected and conducted to Iranian EFL learners (n=72) as a pre-writing test. Their writing performance was rated, based on Jacobs et al.'s (1981) scoring profile (Appendix B), which comprises five sub-parts, i.e., content, vocabulary, language, organization, and mechanics (cited in Weigle, 2002), by 4 professional raters. Based on the results, those participants whose scores were between one SD above and below the mean (i.e., between 66.15 and 75.71) (n=48) were considered to be at the same level of writing proficiency. They were selected to be our participants in the study. They were randomly assigned to two groups: simple-task Group (STG) (n=24) and complex-task Group (CTG) (n=24). The participants in the STG were submitted the total picture (Appendix A). The frames of this picture had been placed in the correct sequence before its administration to the participants of this group (+ single task). The participants in the CTG were given all the frames of the picture; however, the frames were not arranged in their correct order; therefore, these participants were first asked to order the frames in the right sequence, and then to start writing about it (- single task= double task). The participants in both groups were asked to write a story of at least 150 words based on the picture. In both groups, the participants could see the pictures while writing about it (+ Here-and-Now dimension). A teacher was assigned to administer the picture. No special guidance with respect to formal features, organizational points, or the content was given by the teacher to them.

Results

In this study, task complexity was regarded as the main independent variable with two levels (simple task vs. complex task), and fluency as one of the language dimension was viewed as the dependent variable. Fluency was measured by the "average number of words per t-unit" (Larsen-Freeman, 2006, p. 597).

To demonstrate the nullification or verification of the null hypotheses, one-independent samples t-tests was conducted. However, before that, one-sample Kolmogorov-Smirnov tests and Shapiro-Wilk tests were administered to check the normality of the data statistically. The results are shown in Table 2.

Table 2. One-Sample Kolmogorov-Smirnov Tests and Shapiro-Wilk tests of the Participants' Performance on the **Fluency** Dimension of Production

Production dimensions		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
Fluency	STG	.159	24	.121	.936	24	.134
	CTG	.197	24	.086	.922	24	.064

As seen in Table 2, statistically speaking, the data was normally distributed since all the levels of significance were more than .05 (bold numbers in table2). Table 3 reports the descriptive statistics of participants' performance in the simple and complex tasks regarding the production dimensions.

Table 3. Descriptive Statistics of Participants' Performance in Terms of **Fluency** Dimension

Production dimensions		N	Minimum	Maximum	Mean	Std. Deviation	Variance
Fluency	STG	24	6.65	11.35	8.8622	1.48069	2.192
	CTG	24	7.82	20.33	14.0945	4.06084	16.490

The means of the data obtained from the simple and complex task groups were 8.86 and 14.09 respectively.

In order to see whether these differences between the means of the data in each set were statistically significant or not, one independent samples t-test was conducted. Table 4 presents the results.

Table 4. The Independent Samples T-Tests for Task Complexity along **fluency** Production Dimensions

Production Dimensions	Levene's Test for Equality of Variances	t-test for Equality of Means								
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
Fluency	Equal variances assumed	36.615	.00	-5.92	45	.000	-5.31904	.89733	-7.126	-3.51
	Equal variances not assumed			-5.82	27.35	.000	-5.31904	.91253	-7.190	-3.44

Table 4 shows that the variance between the two groups is not equal; therefore, the second line must be reported, i.e., $t(27.35) = -5.82$, $p < 0.05$. Since the level of significance is less than .05, it can be stated that the difference between the means of the STG and CTG in terms of fluency was statistically significant.

Discussion

The results showed that task complexity had a significant impact on fluency. In this research simple task group generated more disfluency in analogy with the complex task group. To put in simpler terms, single task seems to facilitate the fluency of the students' output. The results of some studies (Salimi, et al. (2011) regarding fluency supported the

results obtained from this study. These results can be explained based on Skehan's (1998) limited attentional capacity model. In this theory great importance was attached to meaning it was also regarded as a primary goal of a task (Bygate et al., 2001; Lee, 2000; Nunan, 1989; Prabhu, 1987; Skehan, 1996, 1998; Swales, 1990), while students are asked to accomplish task, they easily drew their particular attention to complete the task successfully. To reach the best result, they activated their exemplar-based system, which provided opportunities for prompt recalling of the ready-made chunks (Skehan, 1998). When the task could not be performed by students in spite of drawing their attentions to the exemplar-based system, they tried to apply to their rule-based system. When the complexity of the task was enhanced, more attentional capacity was devoted to meaning and content, which, based on Skehan's (1998) predictions, produced greater fluency.

It can also be stated that in the complex task, while the learners were involved in ordering the picture frames, more items were activated in their exemplar-based system since they had to have an understandable meaning of the order. To find reasons why one frame had to be arranged after another, they might get a wider view of the story, which helped them generate greater number of words.

Conclusion

The present paper revealed the significant influence of presenting task complexity along +/-single task dimension on fluency in writing performance of Iranian EFL learners qualitatively. Regarding the quantitative aspect, this dimension led to greater fluency gains. The obtained results seem to be more agreeable and applicable with the limited attentional capacity model (Skehan, 1998, 2003) which declares that the attentional capacity is limited and while performing a task, especially when a cognitively processing demands for a task increases, learners draw their particular attention towards to meaning than to formal aspects. Since in this model, human minds attentional capacity is limited and believed to be a single resource, learners, based on the specific characteristic of the task, can only prioritize accuracy or complexity not both of them,. In the present study, application more complex language in the complex task accompanied with the generation of more fluent language, not greater accurate language.

The findings of this study can influence selecting and grading the tasks in TBLT syllabi. Teachers could by the manipulation of different degrees of the task complexity selectively draw learners' attention towards learners writing fluency production in which they have problems. This is of great importance since tasks are disposed to orient learners' attention to the meaning and fluency. Although more task-based studies have been conducted so far, there are still numerous challenges remained to be solved in future researches. Regarding task complexity, a longitudinal research can be conducted in order to scrutinize learners' capabilities in transferring their increased ability due to the task manipulation to other contexts and tasks. To obtain rich description, post-task interviews, questionnaires, retrospective and introspective measures can also be applied. Future researches can be developed around other types of tasks being manipulated along different task features.

References

- Bachman, L. F. (1990). *Fundamental consideration in language testing*. Oxford: Oxford University Press.
- Bachman, L. F., & Palmer, A.S. (1996). *Language testing in practice*. Oxford: Oxford University Press.
- Breen, M. (1989). The evaluation of cycle for language learning asks. In R. K. Johnson (Ed.), *The second language curriculum* (pp. 187–206). Cambridge: Cambridge University Press.

Berwick, R. (1993). Toward an educational framework for teacher-led tasks. In G. Crookes & S. Gass (Eds.), *Tasks in a pedagogical context: Integrating theory and practice* (pp. 97-124). Clevedon: Multilingual Matters.

Brown, H. D. (2000). *Principles of language learning and teaching*. (4th ed.). London: Addison Wesley Longman, Inc.

Brown, G., Anderson, A., Shilcock, R., & Yule, G. (1984). *Teaching talk: Strategies for production and assessment*. Cambridge: Cambridge University Press.

Brown, G., & Yule, G. (1983). *Discourse analysis*. New York: Cambridge University Press.

Bygate, M. (1999). Task as the context for the framing, re-framing and un-framing of language. *System*, 27 (1), 33-48.

Bygate, M., Skehan, P., & Swain, M. (Eds.) (2001). *Researching pedagogic tasks: second language learning, teaching and testing*. Harlow: Pearson Education Limited.

Cambers, F. (1997). What do we mean by oral fluency? *system*, 25(4), 535-544.

Cooper, L. (1984). *The assessment of writing ability: A review of research*. GRE Board Research Report GREB No. 82-15, ETS Research Report 84-12. Princeton: ETS: Retrieved January 16, 2015 from [Http://www.ets.org/Media/research/pdf/RR-84-12-cooper.pdf](http://www.ets.org/Media/research/pdf/RR-84-12-cooper.pdf).

Corder, S. P. (1981). *Error analysis and interlanguage*. Oxford: Oxford University Press.

Crookes, G. (1986). *Task classification: a cross-disciplinary review*. Technical Report no. 4, Center for Second Language Classroom Research, Social Science Research Institute, University of Hawai'i.

Crookes, G. (1989). Planning and interlanguage variation. *Studies in Second Language Acquisition*, 11 (4), 367 -383.

Ellis, R. (1987). Interlanguage variability in narrative discourse: Style shifting in the use of the past tense. *Studies in Second Language Acquisition*, 9, 1-20.

Ellis, R. (2003). *Task based language learning and teaching*. Oxford: Oxford University Press.

Ellis, R. (2008). *The study of second language acquisition* (2nd ed.). Oxford: Oxford University Press.

Ellis, R., & Yuan, F. (2004). The effects of planning on fluency, complexity, and accuracy in second language narrative writing. *Studies in Second Language Acquisition*, 26(1), 59-84.

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

Foster, P., & Skehan, P. (1999). The influence of planning and focus of planning on task-based performance. *Language Teaching Research*, 3, 215-247.

Gilabert, R. (2004). *Task complexity and L2 narrative oral production*. Unpublished doctoral dissertation, University of Barcelona-Barcelona, Spain. Retrieved April 23, 2015 from http://tdx.cat/bitstream/handle/10803/1662/00.CHAPTER_0.pdf?sequence=1

Gilabert, R. (2007). The simultaneous manipulation of task complexity along planning time and [+/- Here-and- Now]: Effects on L2 oral production. In M. del Pilar Garcia-Mayo (Ed.), *Investigating tasks in formal language learning* (pp. 44-68). Clevedon, Avon: Multilingual Matters.

Givón, T. (1985). Function, structure, and language acquisition. In D. Slobin (Ed.), *The crosslinguistic study of language acquisition: Vol I* (pp. 1008-1025). Hillsdale, NJ: Lawrence Erlbaum.

Hulstijn, J. H., & Schmidt, R. (1994). Deconstructing consciousness in search of useful definitions for applied linguistics. *AILA Review*, 1(1), 11-26.

Ishikawa, T. (2007). The effect of manipulating task complexity along the [+/- Here-and-Now] Dimension on L2 written narrative discourse. In M. del Pilar Garcia-Mayo (Ed.), *Investigating tasks in formal language learning* (pp. 136-156). Clevedon, Avon: Multilingual Matters.

Iwashita, N., Elder, C., & McNamara, T. (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(3), 401-436.

Kawauchi, C. (2005). The effects of strategic planning on the oral narratives of learners with low and high intermediate L2 proficiency. In R. Ellis (Ed.), *Planning and task performance* (pp. 143 - 164). Amsterdam/ Philadelphia: John Benjamins.

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.

Lee, J. (2000). *Tasks and communicating in language classrooms*. Boston: McGraw-Hill. Lennon, P. (1990). Investigating fluency in EFL: A quantitative approach. *Language Learning*, 40(3), 387-417

Lenon, P. (2000). The lexical element in spoken second language Fluency. In H. Riggenbach (Ed.), *perspectives on fluency* (pp. 25-42) Ann Arbor, MI: The university of Michigan Press. Long, M. H. (1985). A role for instruction in second language acquisition: task-based language teaching. In K. Hyltenstam & M. Pienemann (Eds.), *Modelling and assessing second language acquisition* (pp. 77-99). Clevedon: Multilingual Matters.

Mehnert, U. (1998). The effects of different lengths of time for planning on second language performance. *Studies in Second Language Acquisition*, 20 (1), 83-108.

Nunan, D. (1989). *Designing tasks for the communicative classroom*. Cambridge: Cambridge University Press.

Prabhu, N. S. (1987). *Second language pedagogy*. Oxford: Oxford University Press.

Richards, J., Platt, J., & Weber, H. (1985). *Longman dictionary of applied linguistics*. Longman: Longman

Richards, J. C., & Rodgers, T. S. (2001). *Approaches and methods in language teaching*. Cambridge: Cambridge University Press.

RimaniNikou, F., & Eskandarsefat, Z. (2012). The Simultaneous Effects of Task Complexity and Task Types on EFL Learners' Written Performance. *Australian Journal of Basic and Applied Sciences*, 6(7), 137-143.

Robinson, P. (1995a). Review article, Attention, memory, and the 'noticing' hypothesis. *Language Learning*, 45(2), 283-331.

Robinson, P. (1995b). Task complexity and second language narrative discourse. *Language Learning*, 45(1), 99-140.

Robinson, P. (2001a). Task complexity, task difficulty, and task production: Exploring interactions in a componential framework. *Applied Linguistics*, 22(1), 27-57.

Robinson, P. (2001b). Task complexity, cognition resources, and syllabus design: a triadic framework for examining task influences on SLA. In P. Robinson (Ed.), *Cognition and second language instruction* (pp. 287-318). Cambridge: Cambridge University Press.

Robinson, P. (2003). The cognition hypothesis, task design, and adult task-based language learning. *Second Language Studies*, 21 (2), 45-105.

Robinson, P. (2005). Cognitive complexity and task sequencing: Studies in a componential framework for second language task design. *Annual Review of Applied Linguistics*, 43, 1-32.

Robinson, P. (2007a). Criteria for classifying and sequencing pedagogic tasks. In M. del Pilar Garcia-Mayo (Ed.), *Investigating tasks in formal language learning* (pp. 7-26). Clevedon, Avon: Multilingual Matters.

Robinson, P. (2007b). Task complexity, theory of mind, and intentional reasoning: Effects on L2 speech production, interaction, uptake and perceptions of task difficulty. *International Review of Applied Linguistics*, 45, 193-213.

Rouhi, A., & Marefat, H. (2006). Planning time effect on fluency, complexity and accuracy of L2 output. *Pazhuhesh-e zabanha-ye Khareji*, 27, 123-141.

Salimi, A., Dadaspour, S., & Asadollahfam, H. (2011). The effect of task complexity on EFL learners' written performance. *Social and Behavioral Sciences*, 29, 1390 – 1399.

Schmidt, R. (1990). The role of consciousness in second language learning. *Applied Linguistic*, 11(2), 17-46.

Schmidt, R. (2001). Attention. In P. Robinson (Ed.), *Cognition and second language instruction* Cambridge: Cambridge University Press.

Skehan, P. (1996). A framework for the implementation of Task-Based Instruction. *Applied Linguistics*, 17(1), 38-62.

Skehan, P. (1998). *A cognitive approach to language learning*. Oxford: Oxford University Press.

Skehan, P. (2003). Task-based instruction. *Language Teaching*, 36, 1-14.

Skehan, P., & Foster, P. (1997). Task type and task processing conditions as influences on foreign language performance. *Language Teaching Research*, 1(3), 185-211.

Skehan, P., & Foster, P. (1999). The influence of task structure and processing conditions on narrative retellings. *Language Learning*, 49(1), 93-120.

Skehan, P., & Foster, P. (2001). Cognition and tasks. In P. Robinson (Ed.), *Cognition and second language instruction* (pp. 183-205). Cambridge: Cambridge University Press.

Swales, J. (1990). *Genre analysis*. Cambridge: Cambridge University Press.

Tavakoli, P., & Skehan, P. (2005). Strategic planning, task structure, and performance testing. In R. Ellis (Ed.), *Planning and task performance* (pp. 239-213). Amsterdam/Philadelphia: John Benjamins Publishing Company

VanPatten, B. (1990). Attending to form and content in the input: An experiment in consciousness. *Studies in Second Language Acquisition*, 12, 287-301.

VanPatten, B. (1996). *Input processing and grammar instruction in second language acquisition*. Norwood, N.J.: Ablex Publishing.

VanPatten, B. (2002). Processing instruction: An update. *Language Learning*, 52 (4), 755-803.

VanPatten, B. (2007). Input processing in adult second language acquisition. In B. VanPatten & J. Williams (Eds.), *Theories in second language acquisition: an introduction* (pp. 115-135). London: Lawrence Erlbaum Associates.

VanPatten, B., & Benati, A.G. (2010). *Key terms in second language acquisition*. Great Britain: Continuum.

Weigle, S. C. (2002). *Assessing writing*. Cambridge: Cambridge University Press.

Wickens, C. D. (1980). The structure of attentional resources. In R. Nickerson (Ed.), *Attention and performance VIII*, (pp. 239-257). Hillsdale, NJ: Lawrence Erlbaum.

Wickens, C. D. (2002). Multiple resources and performance prediction. *Theoretical Issues in Ergonomic Science*, 3, 159-177.

Wickens, C. D. (2007). Attention to the second language. *IRAL*, 45, 177-191.

Widdowson, H. G. (1989). Knowledge of language and ability for use. *Applied linguistics*, 10 (2), 128-137.

Wigglesworth, G. (2001). Influences on performance in task-based oral assessments. In M. Bygate, P. Skehan, & M. Swain (Eds.), *Researching pedagogic tasks: second language learning, teaching and testing* (pp. 186-209). Harlow: Pearson Education.

Yuan, F., & Ellis, R. (2003). The effects of pre-task planning and on-line planning on fluency, complexity, and accuracy in L2 monologic oral production. *Applied Linguistics*, 24 (1), 1-27.

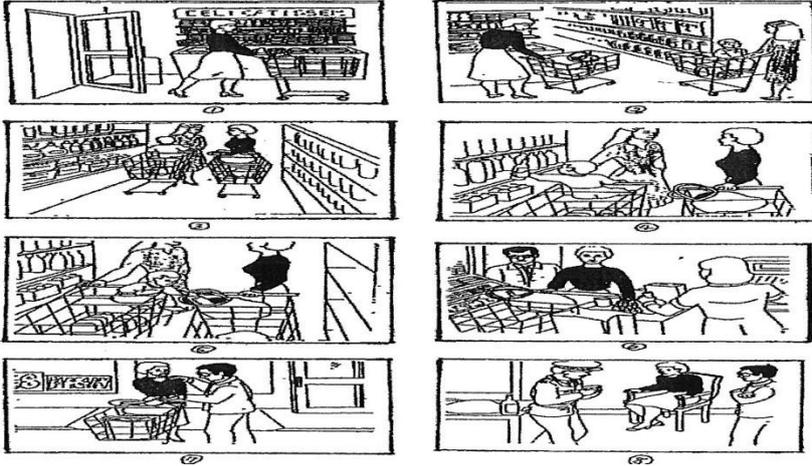
Yule, G. (1997). *Referential communication tasks*. Hillsdale, NJ: Erlbaum.

Appendices

Appendix A

Prompt for the simple writing task, taken from Yule (1997)

Begin the story like this: Today, a woman goes to the supermarket...



Appendix B

Jacobs, Zincograph, Warmouth, Hartfeil, and Hugheys (1981) scoring profile

ESL COMPOSITION PROFILE			
STUDENT	DATE	TOPIC	
SCORE	LEVEL	CRITERIA	COMMENTS
CONTENT	30-27	EXCELLENT TO VERY GOOD: knowledgeable • substantive • thorough development of thesis • relevant to assigned topic	
	26-22	GOOD TO AVERAGE: some knowledge of subject • adequate range • limited development of thesis • mostly relevant to topic, but lacks detail	
	21-17	FAIR TO POOR: limited knowledge of subject • little substance • inadequate development of topic	
	16-13	VERY POOR: does not show knowledge of subject • non-substantive • not pertinent • OR not enough to evaluate	
ORGANIZATION	20-18	EXCELLENT TO VERY GOOD: fluent expression • ideas clearly stated/ supported • succinct • well-organized • logical sequencing • cohesive	
	17-14	GOOD TO AVERAGE: somewhat choppy • loosely organized but main ideas stand out • limited support • logical but incomplete sequencing	
	13-10	FAIR TO POOR: non-fluent • ideas confused or disconnected • lacks logical sequencing and development	
	9-7	VERY POOR: does not communicate • no organization • OR not enough to evaluate	
VOCABULARY	20-18	EXCELLENT TO VERY GOOD: sophisticated range • effective word/ idiom choice and usage • word form mastery • appropriate register	
	17-14	GOOD TO AVERAGE: adequate range • occasional errors of word/idiom form, choice, usage <i>but meaning not obscured</i>	
	13-10	FAIR TO POOR: limited range • frequent errors of word/idiom form, choice, usage • <i>meaning confused or obscured</i>	
	9-7	VERY POOR: essentially translation • little knowledge of English vocabulary, idioms, word form • OR not enough to evaluate	
LANGUAGE USE	25-22	EXCELLENT TO VERY GOOD: effective complex constructions • few errors of agreement, tense, number, word order/function, articles, pronouns, prepositions	
	21-18	GOOD TO AVERAGE: effective but simple constructions • minor problems in complex constructions • several errors of agreement, tense, number, word order/function, articles, pronouns, prepositions <i>but meaning seldom obscured</i>	
	17-11	FAIR TO POOR: major problems in simple/complex constructions • frequent errors of negation, agreement, tense, number, word order/function, articles, pronouns, prepositions and/or fragments, run-ons, deletions • <i>meaning confused or obscured</i>	
	10-5	VERY POOR: virtually no mastery of sentence construction rules • dominated by errors • does not communicate • OR not enough to evaluate	
MECHANICS	5	EXCELLENT TO VERY GOOD: demonstrates mastery of conventions • few errors of spelling, punctuation, capitalization, paragraphing	
	4	GOOD TO AVERAGE: occasional errors of spelling, punctuation, capitalization, paragraphing <i>but meaning not obscured</i>	
	3	FAIR TO POOR: frequent errors of spelling, punctuation, capitalization, paragraphing • poor handwriting • <i>meaning confused or obscured</i>	
	2	VERY POOR: no mastery of conventions • dominated by errors of spelling, punctuation, capitalization, paragraphing • handwriting illegible • OR not enough to evaluate	
TOTAL SCORE	READER	COMMENTS	