Effects of task planning and rhetorical mode of writing on lexical complexity, syntactic complexity, and overall writing quality of EFL writers' task performance

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Abstract[†]

Based on Robinson's Triadic Componential Framework and the definition of task planning by Ellis (2005), this study was carried out to find out the effects of task planning and rhetorical mode on lexical and syntactic complexity, and overall writing quality of writing production of EFL learners. Following a repeated-measures design, the present study involved 41 ELT students who learned English as a foreign language. In this study, two rhetorical modes were used and for both rhetorical modes, two writing tasks were performed. Whereas one of the tasks was carried out under strategic pre-task planning in which students had extra time and opportunity to make a plan, the other task was performed under unpressured on-line planning in which they had no time pressure or no extra special time for planning. Thus, each participant produced 4 essays, and a total of 164 essays were obtained. Each written text was separately analyzed by automated analysis tools for lexical and syntactic complexity, and also assessed through an analytic rubric for general writing achievement. The results revealed that while all the three dimensions in this study showed significant difference according to the rhetorical mode of writing, task planning had varying effects on each component.

Keywords: Task-based language teaching; task planning; rhetorical mode; syntactic complexity; lexical complexity; overall writing quality

1. Introduction

Recent years in SLA research have witnessed an increasing attention to task-based language teaching (TBLT). Main focus of TBLT is to foster learning a language through the use of tasks (Larsen-Freeman & Anderson, 2011) that involve meaningful, pragmatic, and communicative activities (Willis, 1996). That is, the task is the core unit of all processes such as planning, instruction, and assessment in task-based language teaching. The studies in literature explicitly revolve around the effects of cognitive complexity on language production particularly in terms of complexity, accuracy,

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and fluency (CAF) (Ellis & Yuan, 2004, 2005; Kawauchi, 2005; Kuiken, Mos, & Vedder, 2005; Ruiz-Funes, 2015; Skehan & Foster, 2005; Tavakoli & Skehan, 2005; Yang, 2014; Yang, Lu, & Weigle, 2015; Yuan & Ellis, 2003). In this sense, there are two main competing models that focus on cognitive complexity effects, Skehan's Limited Attentional Capacity Model (Skehan & Foster, 1999, 2001) and Robinson's Triadic Componential Framework (Robinson, 2001, 2003, 2005; Robinson & Gilabert, 2007).

The basic assumption of the Limited Attentional Capacity Model is that humans have a limited information processing capacity, and manipulated tasks require learners to use more attentional resources, which, thus, results in trade-off effects among the three aspects of language production: complexity, accuracy, and fluency. Limited Attentional Capacity Model provides three dimensions for task complexity: (Skehan, 1998; Skehan, 2003; Skehan & Foster, 1997, 1999, 2001) code complexity, cognitive complexity, and communicative stress. Whereas code complexity concerns the linguistic demands of the task, cognitive complexity involves task content and the structuring of task material under two sub-categories as *cognitive familiarity* and *cognitive processing*. On the other hand, communicative stress, the third area, is mainly concerned with performance conditions regarding participants, presentation, text, and time.

The Triadic Componential Framework of Peter Robinson (2001, 2003, 2005) stands in contrast to the model of Skehan in terms of complexity task output. Skehan (1998) suggests that due to limited attentional resources, learners have to prioritize among three dimensions of complexity, accuracy, and fluency; however, according to Robinson (2001), learners enhance their performance on all three of these dimensions (CAF). However, the common point between the models of Skehan and Robinson is that both categorized task complexity into three dimensions. Accordingly, Robinson presents task complexity in such three dimensions as: task complexity, task conditions, and task difficulty. The first dimension, task complexity refers to information processing demands that a pedagogic task requires in terms of memory, attention, and reasoning (Robinson, 2001). This dimension, characterized as "the intrinsic cognitive demands of a task which contribute to task variation in spoken and other kinds of performance for any one learner performing a simple and a more complex version [of a task]" (Robinson, Cadierno, & Shirai, 2009, p. 535), has two types of cognitive task features as resource-directing and resource-depleting variables. The latter was renamed as resource-dispersing variables in the later version of Cognition Hypothesis (Robinson & Gilabert, 2007).

The main feature of these variables in the framework is that they can be manipulable and are believed to have influence on language performance and learning in different ways. Whereas resource-directing dimensions accounting for presence or absence of few elements to be compared (+/- few elements), events in the past or present, or things far or near (+/- here-and- now), presence or absence of reasoning demands imposed on the learner (+/- reasoning) make *cognitive* and *conceptual* demands, resource-dispersing dimensions that include possession of planning time allotted to learners (+/-planning), structure of a task single or multiple task (+/- single task), and the presence or absence of prior knowledge (+/- prior knowledge) that could aid in the completion of the task make *performative* and *procedural* demands on learners (Robinson, 2001). These variables were expanded in the later version of the framework (Robinson & Gilabert, 2007). The second dimension, task conditions, focuses on participant variables and participation factors such as flow of information or communicative factors; on the other hand, task difficulty, the third dimension, is concerned with ability variables as much as affective variables. Based on these models, the present study was situated around planning (absence or presence) which is a resource-dispersing variable of Robinsons' Triadic Componential Framework.

1.1. Literature review

Planning is presented in two main categories as: *"pre-task planning"* and *"within-task planning"* (Ellis, 2005) depending on whether it is performed before or during task. Both types of planning have also two sub-categories. Pre-task planning is differentiated according to whether learners are provided with an opportunity to perform the task before main task performance, called as 'rehearsal', or whether the learners engage in preparing for the task performance by considering the content and the way of expressing it, called as 'strategic planning'. On the other hand, whether planning is performed under time-pressure ('pressured') or no time-pressure ('unpressured') defines the type of within-task planning, also called as 'on-line planning' (Ellis, 2005; Ellis & Yuan, 2004; Yuan & Ellis, 2003).

Ellis (2009) presented a review of studies investigating whether three types of planning (rehearsal, strategic planning, and within-task planning) influence three measures of L2 oral performance, accuracy, fluency, and complexity. The studies reviewed demonstrated that although three types of planning had clear impact on fluency, its effect on accuracy and complexity was a bit varying according to the type of planning and other variables such as language proficiency, individual differences, and particularly task design. Likewise, operationalizing planning at three levels as pre-task planning, on-line planning (unpressured performance), and no planning, Ellis and Yuan (2004) examined the effect of planning conditions on fluency, complexity, and accuracy of Chinese learners' written narrative performances. In no-planning condition were 42 undergraduate students required to complete narrating a story through pictures in written production in 17 minutes, for pre-task planning they were similarly given 17 minutes to complete writing but given also extra 10 minutes to plan before starting writing, and they had no time pressure to complete their last written task in on-line planning condition. It was pointed out that, while pre-task planning had greater impact on fluency and syntactic complexity in written texts, on-line planning resulted in greater accuracy. In addition, the results also illustrated that both sorts of planning, pre-taks planning and on-line planning, had effects on different aspects of writing process; for instance, whereas on-line planning promotes monitoring, pre-task planning provides better opportunities for formulation. As for no-planning condition, since the writers were cognitively demanded to formulate and monitor under great pressure, it had no impact on fluency, accuracy, and complexity.

In another study investigating the effects of within-task planning (pressured vs. on-line planning) on both oral and written narrative performance in terms of complexity, accuracy, and fluency, Ellis and Yuan (2005) had consistent results that learners had syntactically complex written and oral productions in both planning conditions although any effect of the two planning was seen in neither oral nor written performance. On the other hand, after careful on-line planning learners had more accurate production than the pressured group did. Furthermore, another significant finding of the study was that learners were more fluent in speaking tasks but more accurate and syntactically complex in their written task performance. Similarly, in their study regarding the effects of strategic pre-task planning and task complexity manipulated as complex or simple on written performance of L2 learners in terms of accuracy, Salimi, Alavinia, and Hosseini (2012) found that although there was a slight relationship between strategic pre-task planning and accuracy in complex tasks performed by learners, strategic planning in simple tasks led to more accurate written texts.

Similarly, Kawauchi (2005) examining the effects of strategic planning and language proficiency on oral narrative performance of L2 learners in terms of complexity, accuracy, and fluency demonstrated that strategic planning had positive effects on the three measures. It was clear from the increased number of words produced and the decreased number of the repetitions that planned task performance of three groups – the Low-EFL, the High-EFL, and the Advanced-ESL learners - resulted in higher fluency; and similarly, greater complex narrative performance was seen in the

planned performance of the three groups. Examined the use of past tense forms by the three groups, it was clearly seen that planning had more limited impact on accuracy.

The studies that investigate the effects of planning on task performance in terms of accuracy, complexity, and fluency appear to reach a three-fold conclusion: planning leads to higher fluency by decreasing on-line cognitive load and thus communicative stress; it provides the learners with an opportunity to produce a more complex language since they have the chance to use their lexical and structural knowledge at maximum level; and planning results in performance with more accurate language as the learners pay more attention to form (Kawauchi, 2005). In contrast to Ojima (2006) and Ghavamnia, Tavakoli, and Esteki (2013) who reported great effect of pre-task planning on complexity and fluency, Johnson, Mercado, and Acevedo (2012) suggested that neither lexical complexity nor grammatical complexity was affected by pre-task planning condition. Furthermore, in support with the study of Ojima (2006) suggesting that pre-task planning had no effect on accuracy, Ghavamnia et al. (2013) also pointed out that on-line planning resulted in more accurate writing production.

Like many other task-based research studies that focus on oral performance, those studies investigating the effect of planning were also mostly concerned with the oral production of learners (e.g, Ahangari & Abdi, 2011; Ellis, 2009; Kawauchi, 2005; Skehan & Foster, 2005; Yuan & Ellis, 2003). However, Ellis and Yuan (2005) investigated the effects of careful on-line planning (unpressured within-task planning) on writing production of learners besides their oral performance since writing, due to its nature, is probably more influenced by careful within-task planning that provides more time to produce their text and control all processes of writing more successfully. The question of how task-based research relates to writing theory has yet to be answered. The importance of writing, which is considered as an aid to learning a language (Hedge, 1988) for learners cannot be ignored and FL/L2 writing should therefore hold a great place in syllabuses of language teaching and learning. In this regard, among major aims of the present study, the most salient one is to fill in a missing piece to the picture by addressing the relationship between task planning and written production.

Moreover, most of the studies on written task performance focused on writing production of L2 learners (Bulté & Housen, 2014; Ellis & Yuan, 2005; Kawauchi, 2005; Kuiken & Vedder, 2007; Ryshina-Pankova, 2015; Vyatkina, 2015); however, they do not shed direct light on the effects of pre-task planning on task performance of EFL writers. Unlike second language that is a medium of instruction besides the native language of learners and thus seen in a natural-like context, foreign language is just seen in classroom context and occur just as a school subject. Therefore, due to the context of language use, great difference may appear between writing performance of EFL learners and that of L2 writers (Ortega, 2005). In this regard, like Genç (2012), Malicka and Levkina (2012), and Ruiz-Funes (2015) setting their studies on foreign language writing, the present study focused on task performance of Turkish EFL writers.

Rhetorical mode is the second dimension of the current study which is believed to cognitively affect the process and outcome of writing (Blair & Crump, 1984; Crowhurst & Piche, 1979; Engelhard Jr, Gordon, & Gabrielson, 1992; Nemati, 1999; Prater, 1985; Prater & Padia, 1983; Yang, 2014). For instance, Shavelson and Stern (1981) found out that writers got the highest score for their narrative writing that was followed by descriptive and then expository writing. However, unlike our first dimension, rhetorical mode does have no clear representation in the two fundamental cognitive frameworks in the TBLT.

1.2. Research questions

Based on the definition of task planning by Ellis (2005), current research issued two types of planning. Accordingly, while one of two writing tasks in the three rhetorical modes was carried out with strategic planning during which the students were given extra time to make planning before writing, the other was performed under careful on-line planning (unpressured on-line planning) during which the students had neither special time to plan what and how to write nor time pressure to complete their writing performances. Aiming at filling the gap in the literature, particularly in EFL context, this study is expected to explore the effect of task planning and rhetorical mode on writing performance of EFL learners. In line with these aims, following research questions were raised:

1-What are the effects of task planning and rhetorical mode on syntactic complexity of EFL learners' written production?

2-What are the effects of task planning and rhetorical mode on lexical complexity of EFL learners' written production?

3-What are the effects of task planning and rhetorical mode on general writing achievement of EFL learners' written production?

2. Method

2.1. Design

This study followed a repeated-measures design in which all conditions of writing task performance were carried out on the same participants. Since a repeated-measures design gives researchers strength in terms of internal validity, it is less likely to be influenced by the threats to internal validity regarding differences between groups (Creswell, 2005; Field, 2012; Raykov & Marcoudiles, 2008), it appeared as an ideal design for such a study.

2.2. Participants

The participants of this study consisted of forty-one freshmen studying at a state university in Turkey. They were in a context where English is taught as a foreign language and thus have almost no access to producing something outside the classroom. Their ages ranged between 19-28 years and all the students had the same L1-Turkish. Before collecting data, all of the students were provided with basic training for advanced writing and the essays written by these students before main tasks were analyzed by the researcher to see their levels and proficiency in writing. In this regard, the study can be said to have a homogenous group.

Each participant wrote an essay for both types of the task in two rhetorical modes as descriptive and narrative writing; that is, totally four essays were collected from each student. In all, 164 essays were obtained to be analyzed and used in this study. Furthermore, all participants signed a consent form showing that they allow the researchers use to their written production for research purposes.

2.3. Procedure

Data were collected in the first term of 2015-2016 academic years during Advanced Reading and Writing I course the researcher herself taught. After one-month writing training that involved basic instructions for essay writing and during which the students also wrote sample paragraphs and one essay, the tasks were carried out and data collection process thus began. Two kinds of writing tasks described as writing with strategic pre-task planning and writing with unpressured on-line planning

were given to the participants for two rhetorical modes. While strategic planning writing tasks were applied as in-class writing, on-line planning writing tasks were performed without having time pressure. In this respect, the students were required to do pre-task planning for the first task in both rhetorical modes and hand in their outlines or first drafts indicating that they did pre-task planning; on the other hand, while conducting the second task carried out under on-line planning, they needed to present just their final drafts they completed by having neither time pressure nor obligation to make planning.

Since students had more opportunities to reach both electronic and printed sources and obtain information about the topics while carrying out on-line planning writing tasks particularly for the first rhetorical mode, they were strictly warned about plagiarism both orally before each task and in written through the syllabus issued at the first week. Accordingly, first three written productions of each student were analyzed by a plagiarism detection software to see whether they used the sources without giving citation and to show that the plagiarizing students would not be tolerated but would be presented with the result clearly stated in the syllabus "…you will be given a 0 with no chance to redo the assignment or test".

Similar topics were chosen for both tasks in the two rhetorical modes in order to avoid the effect of topic familiarity which is believed to have impact on writing performance of students (Stapleton, 2001; Tedick, 1988). In this sense, for the first task, strategic planning writing task of descriptive writing, the students were asked to describe their favorite cities. The students were first given 15 minutes to make planning and prepare an outline of what they would write and then 45 minutes to complete their writing production. After the expiration of 60 minutes, they submitted their paper with the outline paper they prepared during strategic planning. Completing their first task carried out through strategic planning, the students were to perform the second task for the same rhetorical task. They were required to produce a descriptive essay in which they would describe a city they visited before or liked the most. They did have no time limitation to complete their writing and were also free to submit their writing productions in five days.

Likewise, the first task of the second rhetorical mode –narrative writing- was carried out in class through strategic planning. In this sense, a picture was shown and the students were asked to look at it for five minutes. They, similarly, had 15 minutes to make planning of the content and then 45 minutes to narrate the picture and thus to complete their writing task. For the second task to be carried out through unpressured on-line planning, the students were given 16 related pictures involving the same characters and also the same scene as the picture illustrated in the first task to create their own story with no time limitation nor any obligation to do pre-task planning. In the end of the process, a total of 164 essays produced by students were obtained to be analyzed.

2.4. Data Analysis

In line with the literature, it was first decided to evaluate three main dimensions of L2 writing – syntactic and lexical complexity, and general writing achievement. Automated tools for the analysis of linguistic complexity were used since manual analysis of so many texts (totally 164 essays) would be more time-consuming and unreliable without having rater agreement. However, it would be so difficult to find another trained rater to spare time to assess such a great number of written texts in terms of linguistic complexity. Furthermore, an automated tool would provide more reliable and fast available results (Crossley & McNamara, 2009; Lu, 2008). In this respect, using an automated-tool designed for the evaluation of these dimensions stood to reason.

For the analysis of syntactic complexity of students' writing, Lu's "Web-based L2 Syntactical Complexity Analyzer" (L2SCA) was used. The system is a useful tool that enables both second

language teachers and researchers to analyze the syntactic complexity of samples written in English language. It provides one main dimension as syntactic structure that involves word count (WC), sentence (S), verb phrase (VP), clause (C), T-unit (T), dependent clause (DC), complex T-unit (CT), coordinate phrase (CP), and complex nominal (CN), and also four other sub-categories of syntactic complexity, such as length of production, sentence complexity, subordination, and coordination.

Similarly, lexical complexity of the texts written by the students was analyzed by the use of Lu's Lexical Complexity Analyzer (LCA) designed for that purpose using 25 different measures of lexical density, variation, and sophistication. However, just four main indices of them, lexical density (LD), lexical sophistication (LS1), type-token ratio (TTR), and lexical word variation (LDV) were used since written productions of students were not advanced enough to be measured in terms of other indices. After analysis of each essay separately by the programs, 30 randomly chosen essays were re-analyzed by both of the analyzer programs to see whether the programs provide reliable results. It was seen that there was no difference between the previous and the latter results.

On the other hand, the last dependent variable of this study, general writing achievement of the participants was evaluated through an analytic rubric consisting of five sections. The scores for each section ranged between a minimum score of 1 and a maximum score of 5. With the purpose of providing inter-rater reliability, all texts produced by participants were evaluated by two different raters, one of which is the researcher herself. Firstly, 30 essays randomly chosen were rated by three raters in order to test the reliability of the rubric. The raters were trained about what the dimensions involved in the rubric ask and how to score those dimensions. After reaching a .87 inter-rater reliability, with a Cronbach's alpha coefficient reported of a high reliability level, the two of the raters went on analyzing the rest of papers. Following the evaluation of all essays, the results for overall writing quality to see whether there was an inter-rater reliability were retested. Although the level of inter-rater reliability (Cronbach's alpha coefficient=.88) was not low, 34 essays in different rhetorical modes having more than 5-point difference in overall writing quality were reread and rerated to avoid extreme scores. As a result, it was reached a .89 inter-rater reliability, with a Cronbach's alpha coefficient reported of a high reliability level.

The results of automated tools and analytical rubrics were computed into a statistical program, IBM-SPSS 21, and assessed by two-way repeated measures design MANOVA and ANOVA. Furthermore, pairwise comparisons were also tested for the results showing a significant effect in order to see the differences between those variables.

3. Results

3.1. Syntactic complexity

Students' essays were analyzed through Lu's L2 Syntactic Complexity Analyzer (L2SCA) for syntactic complexity in terms of five dimensions such as syntactic structure, length of production, sentence complexity, subordination, and coordination. Syntactic structure for which the analysis program provided such linguistic constructs as word count, sentence, verb phrase, clauses, t-unit, dependent clause, complex t-unit was obtained through the means of those constructs. The results of two-way repeated measures MANOVA indicated a significant main effect of planning, [Wilk's Λ=.53, F $(5, 36) = 6.38$, p = .00, η^2_p=.47], and rhetorical mode, [Wilk's Λ=.21, F $(5, 36) = 26.15$, p = .00, η^2_p=.78]. However, it was found that there was no interaction effect between planning and rhetorical mode of writing, [Wilk's Λ= .85, F $(5, 36) = 1.25$, p = .30, η^2_p=.15]. In other words, although the results of syntactic complexity showed small to medium significant difference between

rhetorical modes and writing tasks under two different planning types, syntactic complexity of essays written by students was not influenced by the interaction of rhetorical task and task complexity. The results were displayed in Table 1.

Table 1. Results of Two-way Repeated-Measures MANOVA for Syntactic Complexity

Effect	Wilks' Lambda Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
rhetorical mode	.216	26.150	5	36	.00*	.784
task planning	.530	6.381	5	36	.00*	.470
rhetorical mode X task planning	.851	1.259	5	36	.30	.149

*Significant effect is reached

Besides multivariate test results, univariate test results showing main effects of both variables on each component separately are also displayed in Table 2. In line with those results, although task planning had a small but significant effect on syntactic structure, $[F(1,40)= 12.51, p=.01, \eta2p =.24]$, it had no effect on any other components of syntactic complexity: length of production, $[F(1,40)= .53, p= .47, \eta2p =.01]$, coordination, $[F(1,40)= .02, p= .88, \eta2p =.00]$, sentence complexity, $[F(1,40)= 1.99, p= .17, \eta2p =.05]$, and subordination, $[F(1,40) = 2.80, p = .10, \eta2p =.07]$. As for the effect of rhetorical task, narrative writing production showed no significant difference from descriptive writing performance of students in terms of sentence complexity, $[F(1,40) = .215, p = .65, \eta2p =.00]$, and subordination, $[F(1,40) = 1.05, p = .31, \eta2p =.03]$; however, a significant effect of rhetorical mode was found on the other three components of syntactic complexity such as syntactic structure, $[F(1,40) = 93.55, p = .00, \eta2p =.70]$, coordination, $[F(1,40) = 5.08, p = .03, \eta2p =.11]$, and length of production, $[F(1,40) = 9.95, p = .00, \eta2p =.20]$. On the other hand, rhetorical task interaction by task complexity did have no significant effect on the four components of syntactic complexity, syntactic structure, $[F(1,40) = .44, p = .51, \eta2p =.01]$, length of production, $[F(1,40) = 1.15, p = .29, \eta2p =.03]$, sentence complexity, $[F(1,40) = .54, p = .46, \eta2p =.01]$, subordination, $[F(1,40) =.43, p = .52, \eta2p =.01]$, and coordination, $[F(1,40) = 3.85, p = .06, \eta2p =.09]$.

**Table 2.** Univariate Test of Within-Subject Effects

Source	Measure	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
rhetorical mode	syntactic structure	30093.778	1	30093.778	93.56	.00*	.701
	length of production	192.146	1	192.146	9.95	.00*	.199
	sentence complexity	.138	1	.138	.215	.65	.005
	subordination	.095	1	.095	1.05	.31	.026
	coordination	.115	1	.115	5.08	.03*	.113
planning	syntactic structure	5085.919	1	5085.919	12.52	.00*	.238
	length of production	4.036	1	4.036	.534	.47	.013
	sentence complexity	1.336	1	1.336	1.989	.17	.047
	subordination	.354	1	.354	2.801	.10	.065
	coordination	.000	1	.000	.023	.88	.001

	syntactic structure	162.575		162.575	.443	.51	.011
	length of production	2.523	1	2.523	1.145	.29	.028
rhetorical mode X task complexity	sentence complexity	.192	1	.192	.541	.47	.013
	subordination	.028	1	.028	.431	.52	.011
	coordination	.145	1	.145	3.845	.06	.088

The following figures clearly illustrate descriptive results for each dimension separately besides showing the interaction between the variables of rhetorical mode and planning.
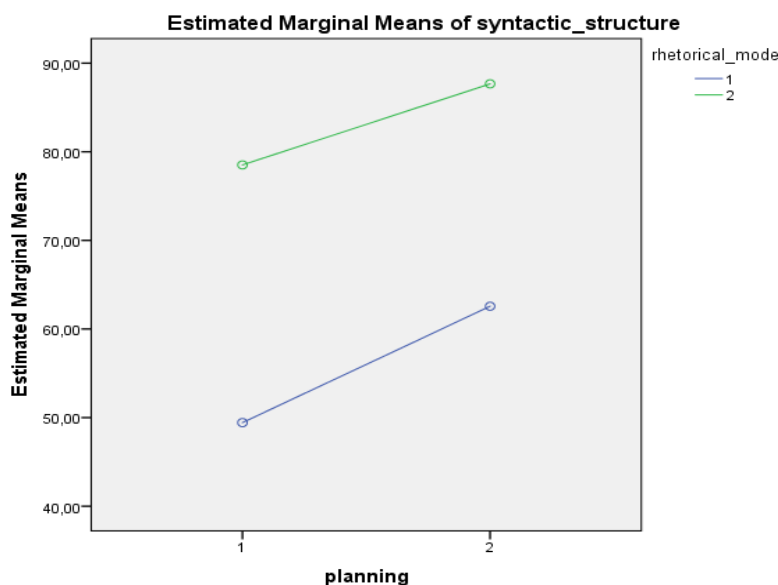

Figure 1. Interaction graph for syntactic structure

As seen in Figure 1, unpressured on-line planning writing tasks in both rhetorical modes took higher scores for syntactic structure compared to the tasks carried out under pre-task planning and that difference was also found significant in pairwise comparison test (MD=11.13, SE=3.14, p.00). Similarly, narrative writing performance of students was significantly more successful than their descriptive writing production in terms of syntactic structure (MD= 27.09, SE=2.80, p. 00).
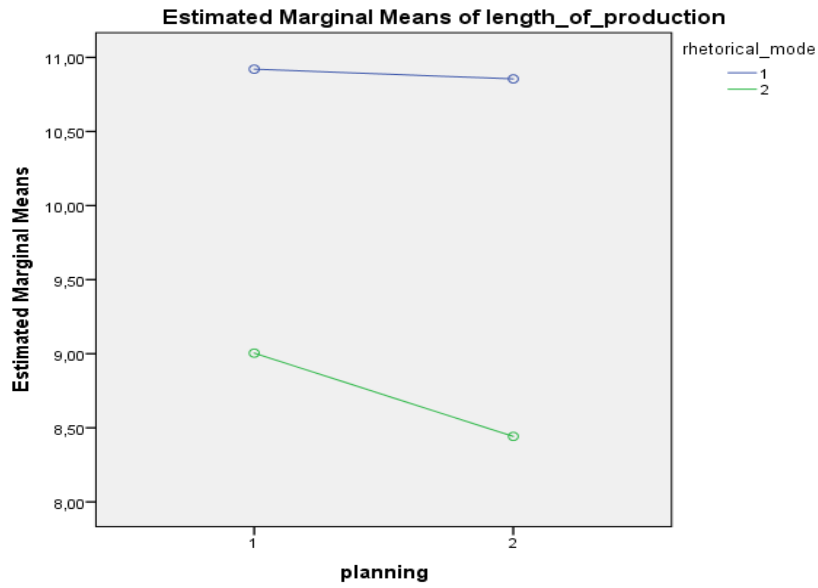
Figure 2. Interaction graph for the length of production

In contrast to the results of syntactic structure, as seen in Figure 2, pre-task planning tasks revealed slightly higher mean scores than unpressured on-line planning tasks for the length of production and this slight difference was nonsignificant (MD=.314, SE=.43, p=.47). On the other hand, the first rhetorical mode, descriptive writing, is significantly greater at length (MD=2.17, SE=.68, p=.00).
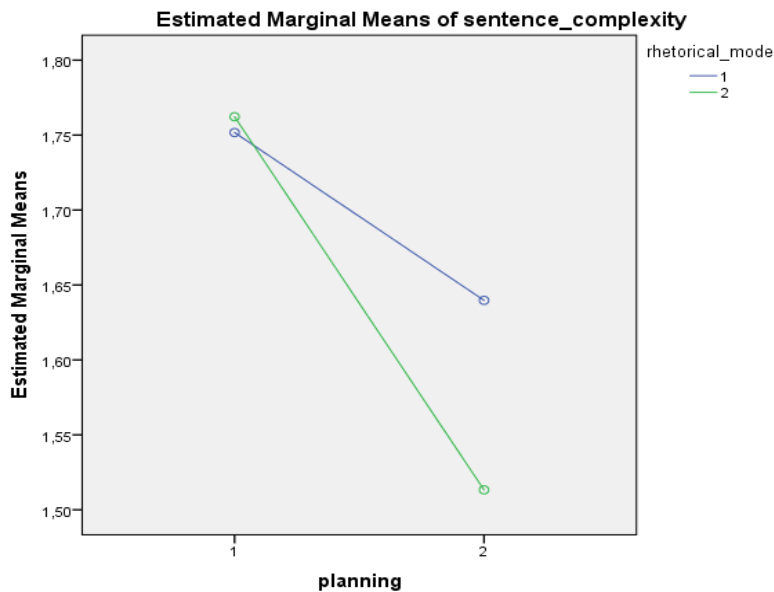

Figure 3. Interaction graph for sentence complexity

It is clear from Figure 3that whereas there is almost no difference between pre-task planning and unpressured on-line planning writing tasks with respect to, particularly in descriptive writing, pre-task planning seems to result in more complex writings at sentence level than unpressured on-line writing task. Furthermore, descriptive writing of students has more complex sentences compared to their narrative writing performance. However, neither the difference between pre-task and un-pressured on-line planning tasks nor that between two rhetorical modes was found significant.
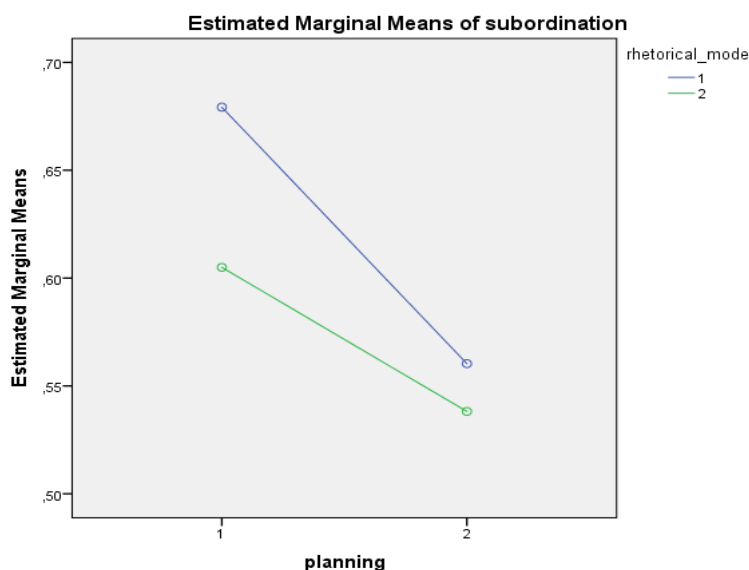
Figure 4. Interaction graph for subordination

As in sentence complexity, it is clear in the figure that students' essays in descriptive mode are of greater subordination compared to their written production in narrative writing; in addition, it is also seen that their essays written through pre-task planning have more subordination than their writing carried out under unpressured on-line planning. Nonetheless, as statistically stated before, since neither rhetorical mode nor planning has any significant impact on the results of subordination, the differences between two rhetorical modes and between planning types in subordination are nonsignificant.
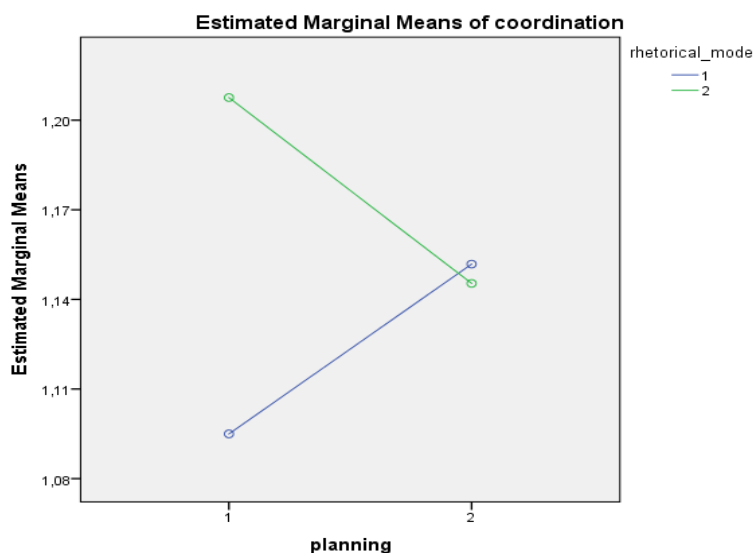
Figure 5. Interaction graph for coordination

Coordination results for pre-task and unpressured on-line planning tasks in the two rhetorical modes of writing are presented in Figure 4. However, there seems to be an inconsistence with the statistical results presented above in terms of the interaction effect of planning and rhetorical mode. In other words, though there is a seemingly clear interaction between planning and rhetorical task in the figure, the statistical results showed the opposite. Moreover, there is a clear difference between the

two tasks in both rhetorical modes. Although the first writing task carried out under pre-task planning in narrative writing has lower scores for coordination than the second task in the same rhetorical mode, the case for narrative writing is the opposite. Subordination results did show no significant difference according to the type of task planning. However, narrative writing performance of students was significantly better in coordination compared to their descriptive writing performance (MD=..05, SE=.02, p=.03).

3.2. Lexical Complexity

With respect to the second research question of this study, two-way repeated measures MANOVA was conducted to analyze the effect of planning and rhetorical modes of writing on lexical complexity that was considered under the three titles – lexical density, lexical sophistication, and lexical variety.

Table 3. Results of Two-Way Repeated-Measures MANOVA for Lexical Complexity

Effect	Wilks' Lambda Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
planning	.736	4.53	3	38	.01*	.264
rhetorical mode	.238	40.55	3	38	.00*	.762
planning X rhetorical mode	.878	1.75	3	38	.17	.122

*Significant effect is reached

According to multivariate test results, it was found out that both rhetorical modes of writing, [Wilk's Λ=.762, F(3, 38) = 40.55, p = .00, η^2_p=.76], and planning, [Wilk's Λ=.736, F(3, 38) = 4,53, p = .01, η^2_p=.26], had a small to medium effect on the results of lexical complexity. However, as seen in Table 3, no interaction of planning by rhetorical mode had any effect on the results of lexical complexity of students' written production, [Wilk's Λ=.878, F(3, 38) = 1.75, p = .17, η^2_p=.12].

Table 4. Univariate Test of Within-Subject Effect

Source	Measure	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Square d
planning	lexical density	.009	1	.009	5.718	.02*	.125
	lexical sophistication	.003	1	.003	1.079	.31	.026
	lexical variety	.015	1	.015	7.542	.01*	.159
rhetorical mode	lexical density	.024	1	.024	15.449	.00*	.279
	lexical sophistication	.456	1	.456	114.280	.00*	.741

	lexical variety	.152	1	.152	39.642	.00*	.498
rhetorical mode X planning	lexical density	.152	1	.152	39.642	.00*	.498
	lexical sophistication	.000	1	.000	.098	.76	.002
	lexical variety	.013	1	.013	4.435	.04*	.100

*Significant effect is reached

According to univariate test results showing main effects of variables for each dimension separately, rhetorical mode significantly affected all of the three components of lexical complexity-lexical variety, [F(1,40) = 39.64, p = .00, η^2_p=.50], lexical density, [F(1,40) = 15.45, p = .00, η^2_p=.28], and lexical sophistication, [F(1,40) = 114.28, p= .00, η^2_p=.74]; on the other hand, task planning had a significant but small effect on the two components of lexical complexity, lexical variety, [F(1,40) = 7.54, p = .01, η^2_p=.16], and lexical density, [F(1, 40)= 5.72, p = .02, η^2_p=.13], but not on lexical sophistication, [F(1, 40) = 1.08, p= .31, η^2_p=.03]. Furthermore, it was also found that interaction between planning and rhetorical mode significantly influenced the results of lexical variety, [F(1, 40) = 4.44, p= .04, η^2_p=.10]; that is, task planning had various effect on the results of lexical variety of students' essays depending on which rhetorical mode of writing they produced in.
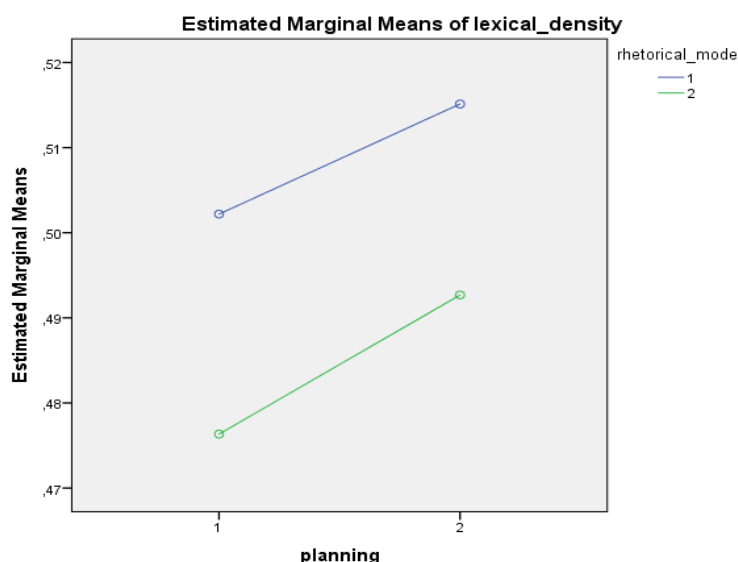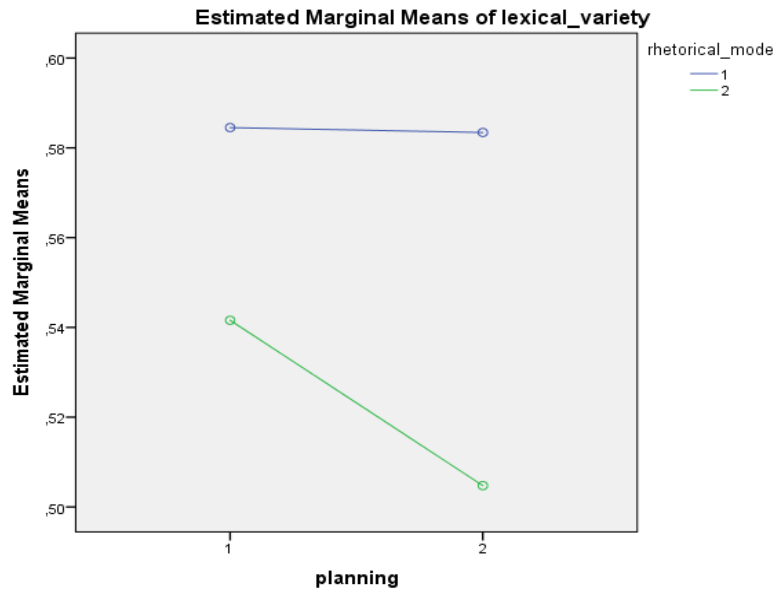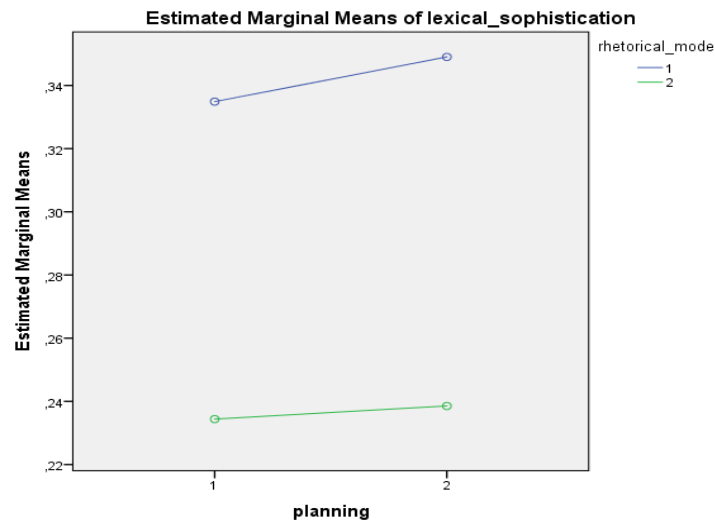

Figure 6. Interaction graph for lexical density

In the figure above, it is clearly illustrated that unpressured on-line planning writing performance of students was found more lexically dense than their pre-task planning writing performance and the difference was significant (MD=.02, SE=.01, p=.02). Furthermore, lexical density of students' production in descriptive writing was significantly greater than that of their written production in narrative writing (MD=.02, SE=.01, p=.00).

Figure 7. Interaction graph for lexical variety

As in lexical density, it is seen that pre-task planning had a significant positive effect on the results of lexical variety in students' written production (MD=.02, SE=.01, p=.01) although difference in two tasks of descriptive writing was so slight. Furthermore, students produced texts significantly richer in lexical variety while writing in descriptive mode than they did in narrative writing (MD=.06, SE=.01, p=.00).

Figure 8. Interaction graph for lexical sophistication

It is shown in the figure that students produced more lexically sophisticated texts while performing their task in descriptive writing compared to their narrative writing performance (MD=.11, SE= .01, p=.00). However, as seen in the figure, there is almost no difference in lexical sophistication of their writing production according to the type of planning whether they performed their writing task under pre-task planning or unpressured on-line planning (MD=.01, SE=01, p=.31).
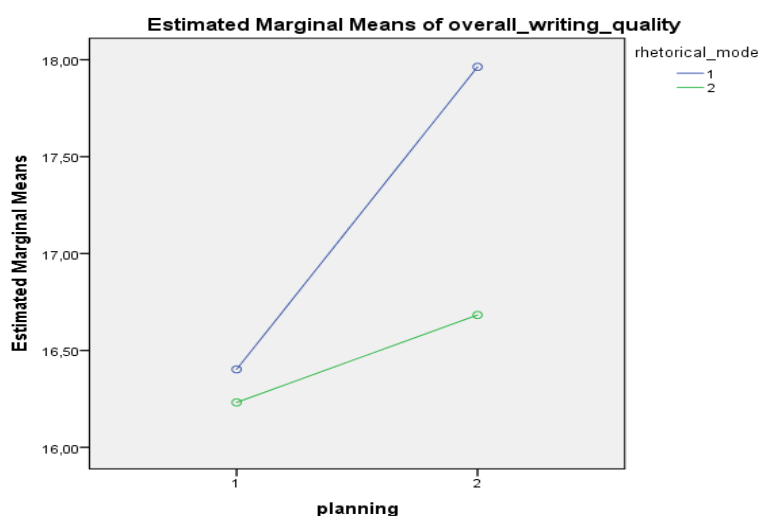
3.3. Overall Writing Quality

After evaluation of students' essays for specific components of writing, the essays were then assessed in terms of general writing achievement. The results of two-way repeated measures ANOVA that was carried out to see whether rhetorical mode and task planning had any effect on overall quality of students' writing revealed that in addition to main effect of task planning, [Wilk's Λ=.83, F (1, 40) = 8.40, p = .01, η^2_p=.17], rhetorical mode, [Wilk's Λ=.79, F (1,40) = 10.78, p = .00, η^2_p=.21], also had a significant but small effect on general writing achievement of students. Furthermore, rhetorical mode interaction by task planning also significantly affected the results of writing quality, [Wilk's Λ=.86, F (1,40) = 6.06, p = .02, η^2_p=.13].

Table 5. Results of Two-Way Repeated-Measures ANOVA for Overall Writing Quality

Effect	Wilks' Lambda Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
rhetorical mode	.788	10.784	1	40	.00*	.212
task planning	.827	8.395	1	40	.01*	.173
rhetorical mode X task planning	.868	6.061	1	40	.02*	.132

*Significant effect is reached

The figure below clearly illustrates the results for overall writing quality of each task.

Figure 9. Interaction graph for overall writing quality

It is clear in the figure that students had a better performance while producing their written texts under unpressured on-line planning compared to their writing performance carried out under pre-task planning (MD=.73, SE=.25, p=.01). As for the difference in the results of general writing achievement according to rhetorical mode of writing, descriptive writing of students was more successful than their narrative writing performance (MD=1.01, SE=.31, p=.00). As seen in Figure 9, the scores for writing quality ranged between about 16 and 18. When it is considered that the rubric used in this study gives 25 as the highest score and 5 as the lowest score, these results can be interpreted as being at a medium level.

4. Discussion

Key to this study was the attempt to investigate whether rhetorical mode of writing and task planning had effect on the results of EFL students' writing in terms of syntactic and lexical complexity, and overall writing quality. In answering the first research question "What are the effects of task planning and rhetorical mode on syntactic complexity of EFL learners' written production?", the results were analyzed in terms of five dimensions: syntactic structure, length of production, sentence complexity, coordination, and subordination. It was found that syntactic structure consisting of word count, sentence, verb phrase, clause, T-unit, dependent clause, and complex T-unit was significantly affected by the rhetorical mode in which students produced their writing. When those components were counted, the highest scores were seen in narrative writing of students compared to descriptive essays.

With respect to task planning, when students wrote through strategic planning, their performance was found poorer. In contrast, while performing their writing tasks conducted under unpressured on-line planning, students got higher scores for each component of syntactic structure. That difference between strategic and on-line planning tasks in both descriptive and narrative writing was statistically significant. In the light of these results, it can be concluded that careful on-line planning (unpressured on-line planning) had positive impact on the results of syntactic structure; on the contrary, when the students were required to write while making strategic planning under time pressure, syntactic structure of their writing was poorly affected. In this regard, these findings revealed that besides rhetorical modes of writing, task planning modified at two levels (strategic planning or unpressured on-line planning) influenced syntactic structure of students' EFL writing performance at a significant level. That is, special time allotted to make a plan of the content and the way of expressing ideas in strategic planning resulted in an increase in number of syntactic structures.

As for the other components of syntactic complexity, rhetorical mode had significant effect on two components of syntactic complexity, length of production and coordination. That is, whether students write a descriptive or narrative essay significantly affected mean length of their writing production in terms of sentence, clause, and T-unit, and coordination in texts. According to the findings, it can be pointed out that students had significantly higher mean scores in their descriptive writing than narrative writing although Beers and Nagy (2009) and Ravid (2004) found out that narratives were produced at greater length. Moreover, contradicting our results that found narrative essays with less production length, Ravid (2004) attributed his results to the fact that narratives involve mostly personal experience easier to generate and thus have greater length. Although rhetorical modes are different, this inference is also valid for the descriptive writing in this study since the topics used in both tasks of descriptive essays were more personal.

The syntactic features used to measure length of production and rhetorical modes compared in the current study showed difference from the measures and rhetorical modes used in previous studies (Beers & Nagy, 2009; Ravid, 2004; Yang, 2014). For instance, Beers and Nagy (2009) applied three measures, words per T-unit, clauses per T-unit, and words per clause but we measured length through the indices such as mean length of sentence, mean length of T-unit, and mean length of clause. In this sense, it is advised to take some caution while discussing the effects of rhetorical mode on text length in the light of previous studies. According to Iwashita (2006), the length of writing cannot completely express the syntactic maturity, but other structures for range or sophistication like coordination and subordination are also necessary to describe it as syntactically complex. However, the findings of this study revealed that coordination showed difference according to the rhetorical mode but not to the type of planning. In this regard, it was found that students produced more coordination in their narrative texts compared to their descriptive texts. Such a result seems to be at variance with the

results of length of production suggesting that descriptive essays were more successful than narrative essays.

The other two components of syntactic complexity (sentence complexity and subordination) measured in this study did not differ according to the rhetorical mode of writing. However, in contrast to specific results for components, the general results for syntactic complexity displayed that it was significantly affected by the rhetorical mode of writing. That is, though influencing just three components of syntactic complexity - syntactic structure, length of production, and coordination -, writing mode had a significant effect on syntactic complexity as a whole dimension. Although Lu (2011) providing a corpus-based evaluation of syntactic complexity measures in order to examine the effect of genre in terms of argumentative and narrative writing revealed that narrative essays were less syntactically complex, it seems rather difficult for the current study to reach such an explicit finding since the results show difference in the measures of syntactic complexity.

On the other hand, considering the effect of task planning, it was found out that whether students produced their writing under strategic planning or careful on-line planning had a multivariate significant effect on syntactic complexity. However, univariate test results revealed that just syntactic structure of students' writing production was significantly affected by unpressured on-line planning. In line with these results, it cannot be said unpressured planning had a significant effect on syntactic complexity of EFL learners' writing performance; instead, in support with Ellis (2009), it can be explicitly suggested that the effect of task planning on syntactic complexity does not seem to be clear. As suggested by Ellis (2009), besides task planning some other mediating factors such as learner factors or task variables may also affect the results of syntactic complexity. In this sense, these results showed contradiction with Ellis and Yuan (2004) reporting significant effect of pre-task planning on syntactic complexity. However, Yuan and Ellis (2003) suggested significant effect of on-line planning on grammatical complexity of students' speech performance. Furthermore, Ellis and Yuan (2005) also contradict with our study since they revealed a large or medium effect of careful condition (unpressured on-line planning) on syntactic complexity of students' speech and writing. In addition, Lu (2011) also revealed that untimed essays were more syntactically complex than timed essays. However, our results did not find any evidence confirming those results for the effect of strategic or on-line planning on syntactic complexity of students' writing.

In response to research question 2 "What are the effects of task complexity and rhetorical mode on lexical complexity of EFL learners' written production?", the findings obtained through the analysis of students' written production by Lu's automated analysis tool, Lexical Complexity Analyzer (LCA), were presented. In line with those findings, it was clear that rhetorical mode in which students produced their writing had small to medium significant effect on the results of lexical complexity in terms of the three dimensions, lexical density, lexical variety, and lexical sophistication. For all three components of lexical complexity, narrative essays were given lower scores than descriptive essays. In other words, descriptive essays were found more lexically various, dense and sophisticated. Yang (2014) similarly found that lexical density was affected by the rhetorical mode of writing; furthermore, in congruence with the results of this study, narrative essays were found to have the least lexical density among the four rhetorical tasks in that study. That is, as far as the proportion of lexical words to the total words is considered, it is less in narrative essays both in the current study and Yang's study (2014). In this respect, it can be concluded that students had a poorer performance in terms of lexical complexity while completing their narrative task. Descriptive performance of students was richer in lexical variety, density and sophistication. In other words, there were more unusual or advanced words and higher proportion of lexical words in descriptive essays. That is, narrative essays of students involved more familiar and fewer advanced words, which is in line with the results of Graesser,

McNamara, and Kulikowich (2011) suggesting that narratives tend to be on familiar topics and thus have more commonly used words.

As for the effect of task planning, the findings of this study suggested that there was a significant difference in lexical complexity according to whether learners performed their writing task through strategic planning or careful on-line planning. Nonetheless, the results for the three dimensions do not seem to be consistent. For instance, unpressured on-line planning positively affected lexical density of students' written production; on the other hand, pre-task planning had a significant positive effect on the results of lexical variety. These results were contradicted by Ortega (1999) who found no effect of pre-task planning on lexical complexity. However, supporting this study, Abrams and Byrd (2016) evidenced the positive effect of pre-task planning on lexical richness of learners' texts.

In order to provide response to the last research question of this study "What are the effects of task planning and rhetorical mode on general writing achievement of EFL learners' written performance?", the students' writing productions were evaluated by an analytical rubric. According to the results obtained through the statistical tests, rhetorical mode had significantly affected students' general writing achievement. In support to Engelhard Jr et al. (1992), Prater (1985), Prater and Padia (1983), the results of this study revealed that writing quality of students showed difference according to the rhetorical mode in which they wrote. In contrast to those studies, the current study described narrative essays as having the lowest writing quality but descriptive essays as the most qualified. Similar results were also presented by Way, Joiner, and Seaman (2000) who illustrated that students had best writing performance on descriptive mode compared to narrative and expository writing. However, unlike the current study, narrative essays in Engelhard Jr et al. (1992) were found the highest qualified essays but their explanation why narratives were the most qualified also provided evidence for our results. They suggested that the more personal responses a writing task requires, the higher proficiency it receives. That is, since topics in descriptive tasks were more personal compared to those in the other rhetorical mode, learners had natural higher scores for writing quality.

These results were also supported by the results of length of production showing that descriptive essays were produced at the greatest length. The same results were also seen in dimensions of lexical variety and lexical sophistication. In line with these results, lexical variety, lexical sophistication, and length of production seemed to have predictive power of writing quality. Crossley and McNamara (2010, 2012) similarly described the essays with higher lexical sophistication as high qualified. Furthermore, according to Crossley and McNamara (2012) lexical variety can be used to significantly predict writing proficiency of L2 learners, which provided support to this study.

Besides rhetorical mode of writing, the other independent variable of this study, task planning had also significant effect on the quality of students' writing. In this regard, students' essays produced under unpressured on-line planning were more qualified than their essays produced under strategic planning. That situation may be related to time factor; namely, as supposed, students had a better performance while conducting their second tasks since they had no time pressure to complete. Moreover, obligation to abide by an outline they prepared in the phase of pre-task planning might confine them to have quickly-prepared production.

5. Conclusions

In brief, the first factor, rhetorical mode of writing was found to have multivariate significant effect on all dimensions of this study. It was pointed out that syntactic structure, length of production, and also coordination showed difference in narrative and descriptive writing performance of students. However, two components of syntactic complexity, subordination and sentence complexity did show

no difference according to the rhetorical mode of writing. On the other hand, all of the lexical complexity measures were affected by the rhetorical mode of writing. Accordingly, narrative writing performance of students was found less successful with respect to lexical complexity. Furthermore, writing quality of EFL learners' production also showed difference according to the rhetorical mode of writing. Supporting the results of lexical complexity, it was found that learners produced better performance while writing their essays in descriptive mode.

As for the effect of task planning, this study revealed that unpressured on-line planning had a significant effect on syntactic structure of students' writing but not on the other components of syntactic complexity. Furthermore, a varying effect of task planning was seen on lexical density and variety of their written production. That is, although students produced texts with greater lexical variety while performing under pre-task planning, their writing produced under unpressured on-line planning was found more lexically dense. However, neither pre-task planning nor unpressured on-line planning had any impact on the results of lexical sophistication. Like lexical density and syntactic structure of students' written production, the overall quality of their writing was positively affected by unpressured on-line planning. In other words, it was seen that students had more qualified essays when they produced their writing without having time pressure and obligation to make a plan of their writing content and process.

In line with the finding of the current study, writing instructors can be suggested to be careful particularly while evaluating writings of their students. As pointed out in this study, they may show different performance or success depending on some factors such as the condition in which writing takes place and the rhetorical mode in which writing is produced. Furthermore, having better performance in one dimension of writing may not mean achievement in writing as a whole; or vice versa. That is, although writing production is not found to be qualified in general terms, it may be successful in some dimensions such as linguistic complexity. In this sense, it is suggested that students' writing should be evaluated from each dimension a successful writing performance is required to have as much as overall writing quality.

However, the current study has some limitations advising to take some caution in interpreting its main findings. These limitations also suggest directions for future research. The first limitation is the participants of this study. They were Turkish EFL students which may pose an obstacle in generalizing the results of the current study to other EFL/ESL contexts or populations. The number of participants (41) that may be a strength for a study following repeated-measures design is also seen as a limitation. Future studies may benefit from a larger number of participants to have more generalizable results. In addition, the findings of this study may be adversely affected by the fact that the participants of this study were nonnative speakers of English. However, native speakers generally produce more complex and longer utterances compared to non-native speakers (Ai & Lu, 2013; Tavakoli, 2009). At least, in order to minimize such an effect, their proficiency in English can be taken into consideration to have more similar results to those of native speakers. Furthermore, as reported by Wigglesworth (1997) and Kawauchi (2005), the effects of planning may also differ according to proficiency level. In this sense, L2 proficiency ignored in the current study may be also investigated by further studies to see its impact on the results of students' writing (Ishikawa, 2006; Iwashita, 2006; Lu & Ai, 2015). Moreover, the design and the measures used may provide a limitation for the current study. For instance, almost all task-based research depends on three measures of CAF by Skehan, but the two measures, accuracy and fluency, were neglected to be assessed in this study. However, on-line planning is regarded to be more relevant to accuracy and fluency (Skehan & Foster, 2005).

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Appendix A. A Sample Essay

Rhetorical mode: Narrative
Score: 20.5 for overall writing quality

A STRANGE TRIP

One day, my family wanted to spend a day in a natural place. I didn't join them because I had an important exam. My father, my mother and my brother didn't want to go alone and so, they invited my uncle. His wife, who is pregnant for six months didn't want to stay without my uncle. So, she joined them too. They decided to rent a house for three days in a very big jungle near the Black Sea. After this plan, their journey began in a week.

My father finished all his work he would have to do that week. And my uncle had to take permission from his boss, who is a very strict man. It wasn't easy for my uncle to convince his boss, so my uncle had to overwork. After all the work was done, they could start with their short trip. My mum and my aunt baked delicious things in order to eat during their trip, in case they get hungry. Next, when they arrived at jungle, they met with the housekeeper and walked inside the house. Nearly everything was made of wood, but the most attractive thing was the fireplace. They rented the house.

First, they had a wonderful breakfast in the garden. Everything was still except the birds. It was a natural ambiance, as my family wanted. Then, they walked through the beautiful green jungle. When they returned to the house, the door was open. They entered the house and the door downstairs, which the housekeeper warned them not to go in, was also open. They entered the room and saw the housekeeper crying. My family was shocked. The housekeeper explained that his wife died there and he still couldn't forget her. After listening to his story, my family felt sorry for him.

At the end, the policemen came and arrested the housekeeper, because he was hiding his wife's dead body in that room. After this event, my family decided never to go to such strange places. When my mum told me about this event, I couldn't believe. I was happy that nothing bad happened to my family.

Planlama ve anlatım türünün yabancı dil olarak İngilizce öğrenenlerin yazma performansına sözcüksel karmaşıklık, dilbilimsel karmaşıklık ve genel yazma başarısı açısından etkisi

Öz

Robinson'un Üçlü Bileşensel Çerçevesi (Triadic Componential Framework) ve Ellis'in görev planlaması tanımına dayalı olarak bu çalışma, görev planlaması ve anlatım türünün yabancı dil olarak İngilizce öğrenenler tarafından üretilen yazma çalışmalarına sözcüksel karmaşıklık, dilbilgisel karmaşıklık ve genel yazma başarısı açısından etkilerini araştırmak için uygulanmıştır. Tekrarlı ölçümler modelinin uygulandığı bu çalışmada, İngilizce'yi yabancı dil olarak öğrenen 41 İngilizce Öğretmenliği Bölümü öğrencisi yer almıştır. Çalışmada, iki anlatım türü ve her bir anlatım türü için ise iki yazma çalışması olmak üzere toplam 4 yazma çalışması yapılmıştır. Her iki anlatım türünde de yazma çalışmalarından birisi, öğrencilerin plan yapmaları için özel zamana sahip oldukları görev öncesi stratejik planlama altında uygulanırken diğeri ise ne zaman sınırlamasının ne de plan yapmak için özel zamanın olduğu zaman sınırlaması olmayan görev esnası plan eşliğinde uygulanmıştır. Böylece, her öğrenciden 4 yazma çalışması olmak üzere toplamda 164 yazma çalışması elde edilmiştir. Her bir yazma çalışması, sözcüksel ve dilbilimsel açıdan bilgisayar programı ile analiz edilmiş ve genel yazma başarısı açısından ise analitik bir rubrikle incelenmiştir. Sonuçlar, çalışmada yer alan her üç boyutun da anlatım türüne göre önemli farklılık gösterirken görev planlamasının her boyut üzerinde farklı etkiye sahip olduğunu açığa çıkarmıştır.

Anahtar sözcükler: Görev tabanlı dil eğitimi; görev planlaması; anlatım türü; dilbilgisel karmaşıklık; sözcüksel karmaşıklık; genel yazma başarısı

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