Unguided Strategic Planning, Task Structure, and L2 Oral Performance: Focusing on Complexity, Accuracy, and Fluency

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Abstract
This replication study was conducted to complement the findings of relevant research (i.e., Tavakoli & Skehan, 2005; Ahmadian, Tavakoli, & Vahid Dastjerdi, 2015; Saeedi & Rahimi Kazerooni, 2014) and sought to investigate the combined effects of two task implementation and design variables, namely, unguided strategic planning and task structure, on second language (L2) oral discourse as measured by its complexity, accuracy, and fluency. Participants were sixty Iranian low-intermediate-level learners of English as a foreign language (EFL). The obtained results revealed that giving learners the opportunity to engage in unguided strategic planning before retelling a narrative with a tightly structured storyline not only simultaneously advantages complexity, accuracy, and fluency but also generates an exponential gain in fluency. On the whole, the findings chimed with previous research findings suggesting that task structure notably contributes to the generally beneficial effects of planning on task performance.

Key words: unguided strategic planning, narrative structure, complexity, accuracy, fluency

INTRODUCTION
Design features and implementation options of L2 oral tasks and their effects on the complexity, accuracy, and fluency (CAF) of language learners' speech have been extensively researched areas of inquiry over the last two decades. These studies have reported that such variables exert differential effects on the CAF. For example, literature on the implementation variable of planning has indicated that provision of different types of planning, be it strategic, careful online, or repetition, induces L2 learners to channel their limited attentional capacity to different performance areas. More precisely, it has been demonstrated that while careful online planners produce more accurate and complex L2 discourse, strategic planners generate more fluent and complex language (see Ellis, 2009, for a comprehensive review). Besides, task repetition has been shown to positively affect fluency and complexity (see Ahmadian & Tavakoli, 2011). Literature on L2 tasks also has reported that the design feature of inherent storyline structure in...
narratives is associated with gains in accuracy and fluency (see Tavakoli, 2009). Though the aforementioned variables have been fully researched, however, their potential synergistic effect has been somewhat under-researched. To cover this gap, Ahmadian et al. (2015) examined the combined effect of careful online planning and task structure and found that careful online planners who performed the tightly structured narrative produced more complex, accurate, and fluent speech. However, those who performed the unstructured task without the opportunity to engage in online planning obtained the lowest scores in complexity, accuracy, and fluency. In another closely related investigation, Saeedi and Rahimi Kazerooni (2014) drew upon the methodology of Ahmadian et al. to replicate these findings for task repetition. As expected, the results revealed that narrative task structure significantly contributes to the impact of task repetition on learners’ oral performance. Interestingly, it was found that giving learners the opportunity to repeat a tightly structured task brings about gains in complexity, fluency, as well as accuracy.

Given these findings, a research question arises concerning the potential interaction effects for a third type of planning, namely, unguided strategic planning, and task structure on the CAF. It needs to be pointed out at the outset that though Tavakoli and Skehan (2005) did simultaneously examine the effects of these variables, the design of their study did not allow for their combined effects. Furthermore, as their investigation was conducted in assessment context, the results obtained for accuracy might have been influenced by testing context (see Ellis, 2009). Thus, there seems to be a need for further exploration aimed at replicating the aforementioned findings in a different setting. The findings of this endeavor will shed more light on the issue and enhance the validity of findings reported to date.

THEORETICAL BACKGROUND

Unguided strategic planning

Whereas careful online planning takes place during task performance, strategic planning involves preparing production in terms of content and form prior to task performance. This type of planning is distinguished from rehearsal in that the latter involves task repetition with the first performance of the task regarded as a preparation for a subsequent performance (Ellis, 2005). According to Ellis, strategic planning is of two types: in guided strategic planning planners are given specific advice regarding form, meaning or both; however, in unguided strategic planning, they do not receive any advice. In the present study, it was decided to examine the effect of unguided strategic planning time as a type of pre-task planning during which L2 learners were allowed to plan and prepare the content of their speech without being given any advice as to form and content.

Planning studies have mostly interpreted the effects on task performance in terms of Levelt’s (1989) model of speech production. The model delineates the process of speech production through three processing components: The Conceptualizer generates the
intended preverbal message, the Formulator transforms the intended message into grammatical and phonological forms, and the Articulator uses the phonological encodings to produce overt speech. Building on this model, some researchers (e.g., Bygate, 2001; Foster & Skehan, 1996; Lynch & Maclean, 2001; Mehnert, 1998) have hypothesized that the opportunity to plan strategically prior to task performance substantially eases the pressure on the Conceptualizer and, as a result, more attentional capacity is released for the Formulator to focus on L2 forms.

The impact of strategic planning on oral L2 complexity, accuracy, and fluency has been documented in a number of studies. On balance, previous research results suggest more consistent positive effects on fluency and complexity. In an early study, Foster and Skehan (1996) compared the effects of engaging in guided and unguided strategic planning. They demonstrated that under both conditions planners produced significantly more complex language. These researchers also found that planners generated more fluent output. Elsewhere, Wendel (1997) found that planned speech yielded more fluent as well as complex language. In yet another investigative attempt, Mehnert (1998) examined the impact of different lengths of pre-task planning time. The positive complexity effect was evident only when learners were given a ten-minute planning time. In the context of Spanish as a second language, Ortega (1999) also reported more fluent performance on a story-telling task completed under planned condition. The complexity was also significantly improved. Yuan and Ellis (2003) also observed a clear advantageous effect for strategic planning on complexity and fluency of L2 learners’ narrative retellings. Elsewhere, Gilabert (2007) crossed strategic planning with the implementation variable of immediacy (i.e., ± Here/Now). The results of his study indicated that under planned condition, narrative tasks performed in both Here-and-Now and There-and-Then elicited more fluent and lexically complex oral discourse.

The results vis-a-vis accuracy have been quite mixed. A number of studies have reported that strategic planning makes for enhanced accuracy. Ellis (1987) was able to show that planning time leads to higher accuracy measured in terms of regular, rule-governed past tense forms. In contrast, Crooks (1989) did not find any notable positive effects on accurate use of articles. Similarly, Wendel (1997) compared the performances of no planning and ten-minute planning groups and failed to find any favorable effect on a general measure of accuracy. In another investigation, Mehnert (1998) reported a significant difference in the accuracy of one-minute planners over non-planners. However, there was no significant accuracy difference between five-minute and ten-minute planners and the one-minute planners. Elsewhere, Foster and Skehan (1996) found that engaging in strategic planning had a beneficial effect on complexity. In a subsequent study, Skehan and Foster (1997) showed that task type significantly contributed to the effect of strategic planning on accurate oral L2 output; planning induced learners to perform more accurately in the case of personal and narrative tasks, but not in a decision-making task. Mehnert (1998) illustrated that gain in accuracy was clear when learners were given one minute to plan. Additionally, this researcher reported that increasing the planning time (i.e., five minutes or ten minutes) did not bring about
any further increase in accuracy. In another planning study conducted in assessment context, Wigglesworth (1997) did not find any significant accuracy difference between planners and non-planners. Yet, the results revealed that high-proficiency participants given time to plan strategically exceeded those who were not. Ortega (1999) also observed positive effect for planning on noun-modifiers but not on articles. Finally, Yuan and Ellis (2003) failed to find any positive impact for strategic planning on accuracy measured in terms of correct clauses and correct verb forms used. As this brief literature review suggests, the effect of strategic planning on accuracy is in part dependent on and mediated through such factors as task type, task difficulty, and planning length.

Task structure

In general terms, (narrative) task structure pertains to the order of events displayed in stories based on sequenced set of pictures which is a function of “a clear timeline; a script; a story with a conventional beginning, middle, and end; a problem-solution structure; and an appeal to what is familiar and organized in the speaker’s mind” (Tavakoli & Skehan, 2005, p.246). According to Tavakoli (2009), a story based on an arbitrary sequence of events without any clear timeline is considered loosely structured. By contrast, a tightly structured story involves a fixed sequence of events with a clear problem-solution story developing in the pictures, such that rearranging any of the pictures will change the theme.

In a pioneering study on task structure, Skehan and Foster (1999) found that, compared with the loosely structured narrative, the story with a tightly structured storyline elicited L2 speech which was significantly more fluent and more accurate. Elsewhere, Tavakoli and Skehan (2005) examined the way degree of narrative task structure affected oral L2 production in an assessment context. On the whole, the results suggested that test performance in the more structured tasks was more accurate and fluent than that in the less structured tasks. In a more recent study, Tavakoli and Foster (2008) tried to replicate the impacts for task structure reported in previous studies. In order to obtain more comparable results, they used the same structured and unstructured tasks employed by Tavakoli and Skehan (2005). These researchers were able to show that task structure is associated with accuracy and fluency in L2 oral production.

Among the previous studies on planning and task structure, two most recent published works that are of particular relevance to and prompted the present research have been conducted by Ahmadian et al. (2015) and also Saeedi and Rahimi Kazerooni (2014). Ahmadian et al. (2015) studied the combined effects of online planning and task structure on Iranian EFL learners’ oral performance. Participants were asked to perform two narrative tasks with different degrees of storyline structure (structured and unstructured) under two different planning conditions (pressured online planning and careful online planning). The outcomes revealed that giving the participants ample time to perform a tightly structured narrative task brought about simultaneous gains in all performance areas. Put differently, performance under this condition was more complex,
accurate, and fluent. Building on available evidence (i.e., Ahmadian et al., 2015; Tavakoli, 2009; Tavakoli & Foster, 2008; Ahmadian & Tavakoli, 2011), Saeedi and Rahimi Kazerooni designed a study aimed at exploring the combined effects of task repetition (as a type of pre-task planning) and narrative task structure on Iranian EFL learners’ oral discourse. On the whole, the results replicated Ahmadian et al.’s findings speaking to the mediating effects of task structure on planning. Precisely, it was observed that while repeating a loosely structured narrative brings about gains in fluency and complexity, rehearsing the tightly structured one induced Iranian EFL learners to enhance quality of their speech in terms of fluency, complexity, as well as accuracy.

THE CURRENT STUDY

With respect to the foregoing theoretical rationale and relevant research findings, one interesting question follows: How does engaging in strategic planning before performing different types of narrative tasks affect quality of L2 oral output? To provide a plausible answer to this question, hence complement available research findings alluded to above, the present study was designed as a replication. Its overarching aim was to determine whether or not the positive effect of planning on quality of L2 speech is, in part at least, mediated through the storyline structure of narratives as previously reported by Tavakoli and Skehan (2005), Ahmadian et al. (2015), and Saeedi and Rahimi Kazerooni (2014). Accordingly, the following research questions and their corresponding hypotheses guided this research:

- How does engaging in unguided strategic planning affect quality of EFL learners’ oral production? Building on the available evidence, it was hypothesized that engaging in strategic planning assists fluency and complexity of EFL learner’s oral production.
- How does retelling a tightly structured narrative affect quality of EFL learners’ oral production? Drawing on the related literature, more fluent and accurate performance was expected.
- How does engaging in unguided strategic planning before recounting a tightly structured narrative influence quality of EFL learners’ oral discourse? As no previous study has explored this issue, no hypothesis was proposed.

METHOD

Participants

Participants were randomly selected from four low-intermediate level classrooms in an English language institute in Iran. They were sixty (n=60) adult male learners between the ages of 18-27 and attended the classes three times a week during a two-month term. These EFL learners had never lived in an English-speaking country. To make sure of the homogeneity of the sample a proficiency test used in the institute and oral interviews were conducted. The participants were randomly assigned to four groups of fifteen each (see the following section).
**Procedure**

Each participant was required to retell one of the picture stories in a quiet room under one of the following conditions:

Following previous research (e.g., Wigglesworth, 2001; Tavakoli & Skehan, 2005), participants who performed under the first condition were given five minutes to take advantage of unguided strategic planning before recounting the loosely structured picture story (+USP/LSN). Those who were assigned to the second group, however, were given just thirty minutes to look at the pictures and recount the tightly structured picture story under unplanned condition (-USP/TSN). Under the third performance condition, each participant was engaged in five-minute unguided strategic planning time before recounting the tightly structured story (+USP/TSN). Finally, the fourth group of participants was given only thirty minutes before narrating the loosely structured story without any opportunity for unguided strategic planning time (-USP/LSN). It needs to be noted that to control for the effects of careful online planning (see Yuan & Ellis, 2003; Ahmadian, 2012) under all conditions participants were given only three minutes for task completion.

Having recorded each participant’s speech, the researcher transcribed, segmented, and analyzed the data in terms of the three production measures of CAF (see the following section for the operational definitions of these variables). The author also had an experienced colleague double check a sample of the total transcripts (10%) so as to ensure the reliability of the segmentations. Results showed an inter-rater reliability coefficient of greater than .90 on each measure of complexity, accuracy, and fluency.

**Instruments**

Two narratives based on two different sequenced set of pictures were employed as data collection instruments to elicit participants’ speech. The narratives (originally adopted from Jones, 1980 and Heaton, 1966) had been previously used in relevant studies (e.g., Saeedi & Rahimi Kazerooni, 2014; Tavakoli, 2009; Tavakoli & Foster, 2008). The stories displayed in each set of pictures differed in terms of the existence of a tight storyline structure.

**Measures of oral performance**

In the related literature, previous studies have used a variety of measures to gauge accuracy, complexity, and fluency of task-based performance (see Housen, Kuiken, & Vedder, 2012, for an exhaustive review). To obtain more comparable results, in the present study the following measures were employed:

**Complexity**

Syntactic complexity is referred to as the ratio of clauses to AS units in the participants’ production. Foster, Tonkyn, and Wigglesworth (2000) define an AS unit as “a single
speaker's utterance consisting of an independent clause, or sub-clausal unit, together with any subordinate clause(s) associated with either” (p. 365). The following examples, cited from Foster et al. (p. 366), exemplify AS units and associated clauses:

- [I have no opportunity to visit] (one clause, one AS unit)
- [It is my hope / to study crop protection] (two clauses, one AS unit)

**Accuracy**

The percentage of error-free clauses to the whole number of clauses was used to assess the accuracy of each participant's performance. Following relevant studies (e.g., Tavakoli, 2009), all syntactic, morphological, and lexical errors were taken into consideration.

**Fluency**

The rate of pruned speech was employed to tap fluency of production because, according to Gilabert (2007), this measure includes both the amount of speech and the length of pauses. Contrary to unpruned speech rate, in pruned speech rate, repetitions, reformulations, false starts, and asides in L1 are not considered in the calculation (Lennon, 1991, cited in Gilabert, 2007). Pruned speech rate was calculated by dividing the number of syllables by the total number of seconds and multiplied by 60.

**RESULTS**

The research questions were posed to study the combined effects of engaging in unguided strategic planning before recounting two narratives of different degrees of storyline structure on the quality of EFL learners' oral output in terms of complexity, accuracy, and fluency. To be able to answer these questions, a series of analyses of variance (ANOVA) followed by post-hoc Scheffe test were run to establish the statistical significance of and identify the location of significant mean differences.

The first research question pertained to the effects of engaging in unguided strategic planning on EFL learners' oral production. Descriptive statistics set out in Table 1 suggest that planners have produced more fluent as well as complex language than those who performed under no planning conditions. As displayed in Table 2, however, one-way ANOVA and post-hoc Scheffe test did not confirm the statistical significance of mean fluency difference between +USP/LSN and -USP/TSN groups ($p = .995$). This finding could be attributed to the positive effects on fluency for task structure and unguided strategic planning.

The incentive behind posing the second research question was to see whether or not performing narrative tasks with a tight structure brings about significant gains in fluency and accuracy in participants' oral production. Mean fluency difference shows that participants in -USP/TSN group did not produce a significantly more fluent language than their counterparts in the +USP/LSN group ($p = .995$).
Table 1. Statistics for dimensions of performance: complexity, accuracy, and fluency

<table>
<thead>
<tr>
<th></th>
<th>Mean (SD)</th>
<th>F value</th>
<th>Sig.</th>
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<tbody>
<tr>
<td>Complexity</td>
<td>+USP/LSN</td>
<td>1.06 (.01)</td>
<td>37.46</td>
</tr>
<tr>
<td></td>
<td>-USP/TSN</td>
<td>1.02 (.02)</td>
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<tr>
<td></td>
<td>+USP/TSN</td>
<td>1.07 (.01)</td>
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<tr>
<td></td>
<td>-USP/LSN</td>
<td>1.01 (.02)</td>
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<th></th>
<th>Mean (SD)</th>
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<tbody>
<tr>
<td>Accuracy</td>
<td>+USP/LSN</td>
<td>29.40 (.91)</td>
<td>36.39</td>
</tr>
<tr>
<td></td>
<td>-USP/TSN</td>
<td>30.66 (.50)</td>
<td></td>
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<tr>
<td></td>
<td>+USP/TSN</td>
<td>31.76 (.70)</td>
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<tr>
<td></td>
<td>-USP/LSN</td>
<td>28.64 (1.23)</td>
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<th></th>
<th>Mean (SD)</th>
<th>F value</th>
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<tr>
<td>Fluency</td>
<td>+USP/LSN</td>
<td>44.90 (.42)</td>
<td>131.25</td>
</tr>
<tr>
<td></td>
<td>-USP/TSN</td>
<td>44.95 (.67)</td>
<td></td>
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<tr>
<td></td>
<td>+USP/TSN</td>
<td>46.36 (.57)</td>
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<tr>
<td></td>
<td>-USP/LSN</td>
<td>42.58 (.40)</td>
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Table 2. Locations of significant mean differences

<table>
<thead>
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<th>Variables</th>
<th>Location of significance</th>
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<tr>
<td>Complexity</td>
<td>+USP/LSN -USP/TSN +USP/TSN -USP/LSN +USP/TSN -USP/LSN +USP/TSN -USP/LSN</td>
</tr>
<tr>
<td></td>
<td>.005* .091 .000* .000* 983 .000*</td>
</tr>
<tr>
<td>Accuracy</td>
<td>+USP/LSN +USP/LSN +USP/LSN -USP/TSN -USP/TSN +USP/TSN +USP/TSN -USP/TSN</td>
</tr>
<tr>
<td></td>
<td>.004* .000* .148 .014* .000* .000*</td>
</tr>
<tr>
<td>Fluency</td>
<td>+USP/LSN +USP/LSN +USP/LSN -USP/TSN -USP/TSN +USP/TSN +USP/TSN -USP/TSN</td>
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<tr>
<td></td>
<td>.995 .000* .000* .000* .000* .000*</td>
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As was pointed out earlier, this may be due to the strategic planning participants in +USP/-TS were engaged in. As for other comparisons, learners who were presented with a tightly structured narrative produced more syllables per minute than those who retold the story with a loose structure. This observation could confirm that L2 speech based on a tightly structured narrative makes for a more fluent oral performance and, in this respect, it has the same effect on language production as unguided strategic planning does. As for the accuracy, analyzing the data reported in Table 2 confirms the statistically significant differences between TSN groups and LSN groups (both ±USP) in terms of the measure of accuracy.

The final research question addressed the synergistic effects of unguided strategic planning and narrative structure on CAF. As it is displayed in Table 2, participants in +USP/TSN group outperformed their counterparts in -USP/LSN in all performance areas. To recap, language learners who were assigned to this performance condition managed to produce more complex, accurate, and fluent language. Interestingly, participants in this group also outperformed participants in all other groups in terms of the fluency measure. Indeed, this striking observation could be ascribed to the combined effects of engaging in unguided strategic planning prior to retelling a story with structured sequence of events. To summarize, this condition proved optimum for generating simultaneous gains in
accuracy, complexity, and fluency. More importantly, compared with other conditions, it yielded the most fluent L2 speech.

**DISCUSSION AND CONCLUSION**

This study was designed as a replication to throw more light on and complement available research evidence concerning the issue of interaction among task design and implementation variables by exploring two widely researched variables, namely, strategic planning and task structure. Findings suggested that participants who had the opportunity to engage in unguided strategic planning produced more fluent as well as structurally complex language. In terms of the measure of fluency, however, +USP/LSN group did not exceed -USP/TSN group, which was indicative of the positive impact of task structure on fluency. In general terms, the outcomes concerning fluency and complexity are in line with the findings of several previous studies pointing to the stronger effect of strategic planning on fluency and complexity but not accuracy. From a psycholinguistic perspective, it may be hypothesized that learners’ engagement in strategic planning is likely to assist the conceptualization component of speech production process in particular and thus contribute to greater message complexity as well as fluency (Wendel, 1997). Similarly, Ellis (2005) reasons that when learners plan strategically they channel attention towards drawing up a ‘conceptual plan’ of what they want to say rather than to formulating detailed ‘linguistic plans’. Given the selective nature of attentional capacity, Ellis adds, when learners plan, they have to choose what aspect of production to focus on; focusing on fluency and complexity is likely to compromise accuracy and vice versa. In light of this argument, it can be posited that giving EFL learners strategic planning time enabled them to carry out elaborate conceptualization; however, online planning demands caused by time limit (3 minutes) dissipated their limited attentional resources and, therefore, they could not monitor their message for grammatical accuracy, hence more fluent and complex but not oral production.

It was also observed that participants in TSN groups performed more accurately than those who were asked to recount the loosely structured narrative in both -USP and +USP groups, a finding that has been documented in several studies (e.g., Foster & Skehan, 1999; Tavakoli & Skehan, 2005; Tavakoli & Foster, 2008). In this connection, Skehan (2009) notes that it is much easier to unravel the sequence of events in narratives in which there is clear progression from one picture to the next; as a consequence, he argues, conceptualizing the message involves less processing load and some attentional capacity is released for the Formulator, where more attention can be channeled towards monitoring accuracy. Hence, performance becomes more fluent and accurate.

The most significant outcome of the study related to the combined effects of task structure and unguided strategic planning on L2 speech. It was discovered that performing a structured narrative task under the planned condition (i.e., the third performance condition) resulted in simultaneous gains in complexity, accuracy, and fluency. This finding was in line with Ahmadian et al. (2015) and also Saeedi and Rahimi
Kazerooni (2014) who found that planning, be it careful online or repetition, in tandem with task structure, exerts the most beneficial effects on performance. In the present study, however, it was also found that this condition brings about an exponential increase in fluency.

The outcomes of this study make an important contribution to the substantial body of literature on task-based planning. As was pointed out at the outset, research on strategic planning has provided mixed results regarding the impact of this variable on accuracy. The present study lent further support to the available evidence confirming the central role of task structure in mediating the effects planning exerts on accuracy of L2 speech. In addition, in light of the ‘limited-view’ of attentional resources and the issue of ‘trade-off’ among performance areas (Skehan, 1998), the present study implied that practitioners can manipulate task performance conditions in such a way as to achieve the desirable pedagogic objective of simultaneously advantaging all aspects of performance through dividing language learners’ attention between form and content.

One limitation of the present study is that only one measure was chosen for gauging the CAF. Future studies, therefore, should employ distinct but complementary measures to tap each dimension of L2 speech. This, according to Ellis (2005), will result in a more valid assessment of performance. Besides, as the present investigation was concerned with unguided strategic planning, one strand of research that may provide a deeper insight into the way planning interacts with task design to influence quality of L2 output is the investigation of the differential combined effects guided planning and task structure might produce. This line of work will definitely help us move towards a full, empirically-grounded account of the influence of planning and task design on performance areas.

REFERENCES


