

The effect of planning time on the fluency, accuracy, and complexity of EFL learners' oral production

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Abstract: The provision of pre-task planning time for second language speech tasks holds some promise as a way to promote focus on form in tandem with meaning-focused instruction. This study explored the effect of planning time on EFL learners' task-based oral performance. The participants were 52 Saudi high school students from Riyadh, divided randomly into experimental and control groups and asked to perform the task respectively with five minutes' pre-task planning and without any planning time. The performances were recorded and transcribed to measure the fluency, accuracy and complexity of the speech production. T-test results showed that pre-task planning participants significantly outperformed the non-planners. Thus, this study indicated that when learners are given pre-task planning time they are able to produce more fluent, accurate, and complex language than those asked to start doing the task immediately, without planning time. The study did not find any evidence of trade-off competition between fluency, accuracy, and complexity. The study recommended that language learners need to be familiarized with planning time and teachers are required to be trained with planning time activities in order to get better gains. Overall, these results provided important pedagogical implications and suggested useful future research directions.

Keywords: task-based learning, pre-task planning, fluency, accuracy, complexity.

أثر زمن التخطيط على الطلاقة والدقة والتعقيد للغة الشفوية لتعلمي اللغة الإنجليزية كلغة أجنبية

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المستخلص: توفير الوقت للتخطيط المسبق لأداء مهام اللغة الثانية الشفوية يجعل بعض الأمل كوسيلة لتعزيز التركيز على البنية بالترافق مع المعنى. بحثت الدراسة الحالية أثر زمن التخطيط المسبق على أداء المهام الشفوية لتعلمي اللغة الإنجليزية كلغة أجنبية. وقد بلغت عينة الدراسة اثنان وخمسون طالباً من طلاب المدارس الثانوية بالرياض، تم توزيعهم عشوائياً إلى مجموعة تجريبية تقوم بتنفيذ المهمة الشفوية مع خمس دقائق للتخطيط المسبق، ومجموعة ضابطة تقوم بنفس المهمة مباشرة دون تخطيط. وقد تم تسجيل وترميز المحادثات، لقياس الطلاقة ودقة وتعقيد الإنتاج الشفوي. وأوضحت نتائج اختبار (ت) أن المشاركين من مجموعة التخطيط المسبق قد تفوقوا على غير المخططين بمستوى دال إحصائياً. وبالتالي، أشارت هذه الدراسة أنه عندما يتم إعطاء المعلمين زمناً للتخطيط المسبق للمهمة، فإنهم يكونوا قادرين على أن ينتجوا لغة أكثر طلاقةً ودقةً وتعقيداً من تلك التي ينتجها من يُطلب منهم البدء فوراً دون أي تخطيط. كما أن الدراسة لم تجد دليلاً على التنافس في الأولوية بين الطلاقة والدقة والتعقيد. وأوصت الدراسة بأن متعلمي اللغة في حاجة إلى تعويدهم على التخطيط، كما يلزم تدريب المعلمين على أنشطة التخطيط للحصول على مكاسب أفضل. عموماً، إن هذه النتائج قدمت تطبيقات تربوية هامة واقترحت اتجاهات بحثية مستقبلية مفيدة.

الكلمات المفتاحية: التعليم القائم على المهام، التخطيط المسبق للمهمة، الطلاقة، الدقة، التعقيد اللغوي.

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Introduction

Research in *Task-Based Language Teaching* (TBLT) has inspired many pedagogical innovations in second language acquisition. Focusing on task as a pedagogic tool opens up broader perspectives for exploring learning (Samuda & Bygate, 2008). Research in the last few decades has explored how language acquisition can be enhanced by giving learners specific tasks to perform. Second language learners, especially those with limited proficiency in the second language, often find it difficult to attend to meaning and form at the same time and thus have to make decisions about how to allocate their attentional resources by prioritizing one of these aspects of language over the other. However, when given time to plan a task, language learners have an opportunity to prepare their speech to achieve their communicative goals, freeing them from processing-load pressure. On this basis, it has been hypothesized that *pre-task planning* can play a beneficial role in reducing cognitive load during language processing, which in turn allows learners to attend to various aspects of language and thus leads to more successful task performance.

Theoretically, it can be assumed that language learners prioritize meaning at the expense of form and that as a result they focus attentional resources on meaning and apply only surplus or spare attention to form. VanPatten (1990) claims that language learners find it difficult to pay attention to form and meaning simultaneously when performing a communicative activity. Ellis (2005) argues that planning reduces cognitive load during language production processing and thus allows second language learners to better retrieve information pertaining to various aspects of language from working memory, resulting in more accurate production. Giving learners time to plan may also allow them to develop readymade plans for new situations.

There is a growing interest in the relationship between focus on form and meaning. Schmidt (1990) proposes that *noticing* is one necessary condition for effective processing to take place. He argues that not all input has equal value and only that input which is noticed then becomes available for effective processing. This implies that planning time will help second language learners channel their attention towards achieving better output. When second

language learners are pressed to communicate, they will operate under an *exemplar-based system* rather than a *dual-mode system*. In the exemplar-based system, learning is interpreted as the accumulation of chunks. Whereas, in the dual-mode system, it is assumed that what is learned consists of underlying rules which have been induced from the stimulus material and become the basis for generalization (Schmidt, 1995). Planning time will help learners invest attention to speed up the time of the processing operation and come up with better language productions.

The ultimate goal of research in second and foreign language acquisition is to achieve native-like speaking ability. Fluency, accuracy, and complexity have been considered to be the three key aspects of language production (Ellis, 2009). It is generally assumed that a proficient language speaker should have the ability to perform tasks fluently and accurately, using complex language. As suggested by Skehan (1996), improving these three main areas is thus a core goal of language instruction.

Fluency

Skehan (1996) states that *fluency* concerns the learner's capacity to mobilize an interlanguage system to communicate meaning in real time. Fluency can be defined also as the production of language in real time without undue pausing or hesitation (Ellis & Barkhuizen, 2005). Ellis (2005) defines fluency as the capacity to use language in real time, to emphasize meanings, possibly drawing on more lexicalized systems. Tavakoli and Skehan (2005) argue that fluency can be seen as a construct, with sub-dimensions such as *breakdown fluency*, *repair fluency*, and *speed fluency*.

One of the earlier classroom studies in this field was by Foster (1996), who operationalized planning time on three different tasks, namely personal information, narrative, and decision-making tasks. In a study conducted among 32 intermediate ESL learners, Foster used number of pauses, total silence, and repetitions to measure fluency, and found that planning time helped the learners produce more fluent language in all task types. With the same participants and tasks as in Foster's study (1996), Foster and Skehan (1996) reported a positive effect of planning on fluency except in the decision-making

task. This inconsistency might be the result of the different measures used in the two studies. Then, in Skehan and Foster (1997), only one measure of fluency is used (number of pauses). The researchers reported that planners paused less than non-planners in personal and narrative tasks, results echoing those of Foster and Skehan (1996). In a more recent classroom study, Skehan and Foster (2005) investigated the effects of guided and unguided planning at two different times: during the first five minutes and during the second five minutes of performance. They found that both guided and unguided planners produced fewer end-of-clause pauses than the no-planning group at both times; further, the guided planning group was found to produce more filled pauses (fillers such as “ah”, or “oh” or “um”) than the unguided planning group as well as the no-planning group, but only at the second time. The researchers concluded that there were differences in the effect of planning between early and subsequent stages of performance, namely that the effect is less evident in later stages.

Mochizuki and Ortega (2008), in another classroom study, concluded that *guided planning* can be an optimal instructional choice for beginning-level foreign language learners. Only one measurement of fluency (mean number of words per minute) was used in this study, which failed to find any significant differences in fluency between groups. However, the researchers did conclude that non-guided participants tended to be more fluent than no-planning and guided-planning participants.

In a laboratory study by Wendel (1997), learners were asked to watch two films and then retell them under two conditions: 10 minutes' planning and no planning. Wendel found that the speech rate under the planning condition was significantly higher than that under the no-planning condition, and concluded that planning benefited fluency. In another laboratory study, Mehnert (1998) explored the effect of manipulating length of planning time. The results were consistent with those of Wendel regarding fluency. In Mehnert's study, four groups of second language learners performed two tasks each. Three experimental groups were respectively given 1, 5, and 10 minutes of pre-task planning time, while the control group had none. The researcher argued on the basis of the results that the longer the time allotted to

pre-task planning, the stronger the predicted effects would be.

In a study conducted with advanced learners of Spanish, Ortega (1999) found that fluency was enhanced by pre-task planning. In contrast, Kawauchi (2005) concluded that planning benefited low- and high- intermediate participants but not advanced ones. This inconsistency is likely due to the adoption by the Kawauchi study of insufficiently challenging tasks that did not force advanced learners to make use of planning time.

Yuan and Ellis (2003) studied the effects of pre-task planning on fluency. Fluency was measured by counting the number of syllables per minute. Yuan and Ellis reported significant effects for pre-task planning on fluency. In addition to exploring the effect of planning on language output, Tajima (2003) investigated how learners responded to the opportunity to plan and how they used their planning time. Finding did not only indicate that pre-task planning resulted in an increased speech rate and in fewer pauses but also that planning was more evident in learners who held positive attitudes towards it. Sangarun (2005) explored the effects of guided pre-task planning and found an overall positive effect of planning on fluency. Gilabert (2007) found that planned conditions resulted in greater fluency and lexical richness than unplanned conditions. In this study fluency was measured using the pruned speech rate (the number of syllables per minute). Guará-Tavares (2008) investigated the mediating role of working memory for the effect of speech planning on fluency, in planning and no-planning conditions, and reported that working memory correlated significantly with fluency in the planning condition. Fluency was measured by counting number of words per minute (un-pruned), number of words per minute (pruned), the number of silent pauses per c-unit (independent utterances providing referential or pragmatic meaning), and percentage of total time accounted for by pausing time. In general, across these lab studies, it seems that the laboratory setting aids the effect of planning on fluency.

In the testing context, Wigglesworth (1997) found that one minute of pre-task planning time generally helped participants improve their production; this was especially the case with high-proficiency learners and

in tasks with high cognitive load. Analytic ratings of fluency, grammar, and intelligibility, as well as number of self-repairs, were used as measures. Wigglesworth reported that planning time resulted in greater fluency; however, this was not evident in the analytic ratings. Using a different amount of planning time (five minutes) but the same context (testing), Wigglesworth (2001) manipulated the familiarity and structure of tasks and assessed them using analytic ratings of fluency. The results showed that planning had an adverse effect on performance in both structured and unstructured tasks; however, this inconsistency isn't surprising, since Wigglesworth (1997)'s study did not report positive effect of planning on fluency when the analytic ratings were used. Elder and Washita (2005) similarly reported no effect of planning on scores obtained from analytic ratings of student performance on narrative tasks in a testing situation. In a fourth testing study, by Tavokoli and Skehan (2005), the researchers investigated the effect of task structure on the learners' demonstrated fluency in performance of narrative tasks. They also studied the effect of proficiency on production as a factor. Fluency was measured by speech rate, total silence, various repair measures (such as false starts), and length of run. The researchers found significant differences in fluency by planning and proficiency.

Ellis (2005) noted that testing context is often confounded with another variable, length of planning time, as testing studies typically provide a much shorter time for planning than classroom or laboratory studies. He speculated that the reason planning is generally ineffective in a testing context is that learners perceive they are being assessed and this leads them to focus on accuracy at the expense of fluency.

Accuracy

Skehan (1996) defines *accuracy* as the capacity of the learner to handle whatever level of interlanguage complexity he or she has currently attained. As the language learner works towards producing language more accurately, he or she is seeking control over the linguistic elements that he or she has already learned; thus Ellis (2005) states that accuracy can be defined as the ability to avoid errors in performance, possibly reflecting higher levels of control in the language and/or a conservative orientation.

Previous studies have reported mixed results regarding an effect of planning on accuracy. Ellis (1987) reported no such effect. He studied the effects of planning time on the accuracy of three different forms of the English past tense—the irregular past, the regular past, and the copula—using three different degrees of planning. The researcher found that performance on the regular past declined as time to plan decreased. However, accuracy in the use of the irregular past was not affected by planning time. Foster (1996) reported mixed results for the effect of planning on accuracy depending on the task used. Specifically, unguided planning benefited accuracy in the personal information and decision-making tasks but not in the narrative task. Foster and Skehan (1996) found that planning benefited the accuracy of only the undetailed planning group, who were able to produce more error-free clauses than the other groups. This might be because when learners are given time to plan but no guidance as to how to use that time, they use it to plan what they are going to say, and as a result we get more accurate (as opposed to fluent or complex) output. In contrast to Foster (1996), Skehan and Foster (1997) found that their pre-task planning groups were more accurate on the narrative task than the no-planning group, and that detailed planners produced more accurate speech than the undetailed planning group, but only at first. In addition to the effects of guided and unguided planning, Skehan and Foster (2005) investigated the effects of planning at two different times (the first and second five minutes of the task performance), and found that detailed planners produced more accurate speech than non-planners at time 1 only.

Mochizuki and Ortega (2008) found that type of planning may have an effect on accuracy. They asked first-year Japanese high school students learning English to perform an oral story-retelling task in pairs under one of three conditions: no planning, five minutes' unguided planning, or five minutes' guided planning in the form of a grammar handout about English relative clauses. The accuracy measurements were frequency of use and degree of accurate use of relative clauses. Their results showed that guided-planning participants produced more accurate relative clauses in their narratives than unguided- or no-planning groups.

Some laboratory studies have also investigated the

effect of planning on accuracy. For instance, Wendel (1997) used percentage of correct verbs and clauses as a measurement of accuracy, but did not find evidence of the usefulness of planning for accuracy. Mehnert (1998) found that in a structured task, 10 minutes of planning resulted in fewer errors per 100 words than no planning, whereas in an unstructured task the difference was found with only one minute of planning. This result suggests an interaction between type of task and planning time. Ortega (1999) investigated the effect of planning among advanced learners and reported a beneficial effect of planning on accuracy. In contrast, Rutherford (2001) and Yuan and Ellis (2003) concluded that there was no significant effect of planning on accuracy. Another factor that appears to be significant is the attitudes that the learners hold towards planning, as highlighted by Tajima (2003). In this study, the experimental group was given ten minutes' planning time, and also completed a post-questionnaire about planning investigating how they responded to the opportunity to plan. Tajima concluded that the positive effects of planning were only evident in those learners who evaluated planning time positively.

Sangaran (2005) concluded that participants were generally able to allocate their attention as instructed but that there was more accurate production by pre-task planners. Kawauchi (2005) investigated the effect of three types of planning activity—writing, rehearsal, and reading—and also the effect of learners' proficiency on their planning. Accuracy was calculated by the degree to which learners supplied past forms of copula, regular, and irregular verbs. Kawauchi concluded that planning benefited low- and high- intermediate participants but not advanced ones, suggesting that planning time is beneficial only with learners who do not have full or nearly full mastery of a language. Gilabert (2007) reported no significant effect of planning on accuracy, whereas Guara-Tavares (2008) found that the planning group was significantly more accurate than the control group. In the no-planning group, working memory correlated significantly with accuracy. However, Guara-Tavares reported no correlation between working memory and the measures of accuracy in the planning condition.

There have been mixed results regarding the

effect of planning on accuracy in the testing context. Wigglesworth (1997) reported that one minute of pre-task planning time generally helped participants, especially the high-proficiency learners, produce more accurate output. Tavokoli and Skehan (2005) also showed that proficiency is an effective factor. Their results showed that more proficient learners' language was more accurate; however, Elder and Washita's study (2005) found no significant effect of planning on accuracy in the testing context.

Complexity

Skehan (1996) states that *complexity* relates to the stage of elaboration of the underlying interlanguage system. Similarly, Ellis (2005) defines complexity as the capacity to use more advanced language. According to Ellis and Barkhuizen (2005), this elaborated language can be conceived of in two different senses: first, as the cutting edge of the development of the learner's language, and thus the part that is not yet fully automatic; and second, as the learner's readiness to use a wide range of linguistic structures. They state that complexity is a function of the learner's eagerness to try out new linguistic knowledge in oral performance.

Most previous studies on the effect of planning on complexity have reported some evidence that planning leads to more complex language output. Crookes (1989) reported that learners afforded pre-task planning time were able to produce more complex language than non-planners. In Crookes's study, Japanese learners of English were required to perform monologic tasks under two different conditions: one with ten minutes' strategic planning time and the other with no pre-task planning who received guidance in more cognitively demanding tasks. In a subsequent study, Foster and Skehan (1996) also concluded that planning benefited complexity.

However, the interaction between task type and complexity has not been adequately clarified. Foster and Skehan found that strategic planning led to greater grammatical richness in their personal information and narrative tasks but not in the decision-making task. Similarly, Skehan and Foster (1997) found no effect on their narrative task but did find that planning resulted in greater grammatical complexity in the personal and decision-making

tasks. These results were replicated in Skehan and Foster (2005). The participants in that study were 61 intermediate-level ESL students divided into three groups: no planning, ten minutes' guided planning and ten minutes' unguided planning. The researchers provided new information in the middle of the decision-making task to force participants to plan online. They found that the detailed planning group produced more subordinate clauses than the other two groups but only in the first five minutes of task performance, not the second, suggesting that as the task progresses, the effects of guided planning reduce. In another more recent classroom study, Mochizuki and Ortega (2008) failed to find any differences in general complexity with low proficiency learners. Wendel (1997) in a narrative task study, found that the planning group got higher T-unit scores but did not use more word families. On the other hand, Rutherford's (2001) laboratory study failed to find any evidence that planning benefits complexity in narrative tasks.

The only study conducted explicitly to explore the relationship between length of planning time and complexity failed to find any evidence for it. Mehnert (1998) studied the effects of different amounts of planning time on second language productions. In his study, four groups of second language speakers performed two tasks each. The three experimental groups were respectively given 1, 5, and 10 minutes of pre-task planning time, while the control group had no planning time. Mehnert reported no effect of planning on complexity in any of the four time conditions. Yuan and Ellis (2003) used three measures of complexity: the number of sentence nodes per T-unit, the mean segmental type-token ratio and the variety of verb forms used. This study reported that the planning group produced more clauses per T-unit than the no-planning group, although it failed to find that planning had any effect on lexical complexity. Tajima (2003), in a laboratory study, failed to find any effect of planning on grammatical complexity. However, it was found that planners produced more lexically complex language.

Sangarun (2005) did not find any significant difference between the effects of the different types of planning investigated. In this study, 40 learners of Thai as a second language were instructed to plan for a task under one of three conditions: focusing on

meaning, on form, or on both. Sangarun concluded that planning aids complexity irrespective of what type of planning. Kawauchi (2005), who studied learners at three proficiency levels reported that planning assisted the accuracy of low- and high-intermediate participants but not advanced ones. Possibly, this was because the tasks adopted were not challenging enough to push the advanced learners to use the planning time, as we have suggested in the case of fluency above. This study also showed, again similarly to the findings for the other aspects, that another seemingly significant factor is the attitudes learners hold towards planning.

A laboratory study by Gilabert (2007) showed no effect of planning on complexity, although Gilabert did report that planning resulted in significantly greater lexical richness. Guará-Tavares (2008) reported that working memory correlated significantly with measures of complexity in the planning group but not in the no-planning group, and also that the planning group's productions were significantly more complex than those of the control group.

In the testing context, Wigglesworth (1997) found that planning time resulted in greater complexity especially among high-proficiency learners and in tasks with high cognitive load. However, there was significance in only some measures. In contrast, Wigglesworth (2001) reported that planning had an adverse effect on production in both structured and unstructured tasks. Elder and Washita's results (2005) showed no effect of planning on complexity; on the other hand, Tavokoli and Skehan (2005) reported that planners' language was more complex than that of the no-planning group and also that more proficient learners' language was more complex. It can be concluded that planning has less of an effect in a testing context than in a teaching or laboratory context.

Statement of Research Problem

The shift of emphasis away from written to oral skills has resulted in more attention to second and foreign language research to investigate ways of helping second and foreign language learners achieve higher degrees of oral proficiency. Priority taken over the improvement of oral language production. On the basis of the review of previous studies, it can be seen that most studies have found obvious effects of

planning on the fluency and complexity of learners' language production (Crookes, 1989; Foster & Skehan, 1996; Foster, 1996; Wigglesworth, 1997; Ortega, 1999; Kawauchi, 2005; Tavakoli & Skehan, 2005). However, with regard to the effect on accuracy, the results were mixed. Some studies have reported positive effects on accuracy (e.g., Foster & Skehan, 1996; Wigglesworth, 1997; Mehnert, 1998; Yuan & Ellis, 2003; Tajima, 2003; Kawauchi, 2005; Tavakoli & Skehan, 2005; Mochizuki & Ortega, 2008; Guar-Tavares, 2008). Thus, one limitation to the task planning research to date is that it has failed to provide consistent results regarding the effect of planning on the fluency, accuracy, and complexity of oral language production. The effects of different planning conditions on the complexity, fluency, and especially accuracy of oral task production are thus still open to question.

Another limitation of the previous studies is the lack of consistency in the measurements used (Ortega, 1999; Ellis, 2005) which in turn makes it difficult to compare the results. To address this, the current study makes use of a more consistent method for measuring the effect of pre-task planning on learners' oral performance. Moreover, Ellis (2009) reported that the majority of previous studies allocated 10 minutes for planning. Only one study, by Tavakoli and Skehan (2005), allocated five minutes, and it found significant differences across all three measures of language production. Thus, the current study will further explore the effect of five minutes of planning time on oral task performance. Furthermore, the street map task used in the current study requires no more than eight minutes to complete, making it easier to set aside an additional five minutes for pre-task planning time. Also, of the 19 studies considered by Ellis (2009), 13 involved performing a task in an interactive mode, while six were to be performed monologically. Most of the tasks involved providing personal information, decision-making, or coming up with narratives based on films or pictures. There was no study conducted to explore the effect of planning with information-gap task type. In order to address this limitation in the previous studies, the current study intends to explore the effect of planning with the information-gap activity.

To the best of the present researchers' knowledge, no study to date has explored the effect of planning time

on the performance of EFL learners in the Arabic context. Thus, the aim of the present study is to develop a greater understanding of the influence of planning on the accuracy, fluency and complexity of foreign language oral productions in task performance, among a population of Arabic-speaking learners of English.

Study Objective

The present study aimed at conducting research in the area of task-based language teaching to explore how task planning, as a condition under which tasks are performed affect learner's performance. The purpose of the present study was to determine whether giving English language learners pre-task planning time helps them to produce more enhanced language output as they perform language learning tasks.

Study Questions

This study addressed the following research questions:

1. How does pre-task planning time affect EFL learners' oral production in an information-gap task?
 - 1.1 How does pre-task planning time affect the **fluency** of EFL learners' oral production in an information-gap task?
 - 1.2 How does pre-task planning time affect the **accuracy** of EFL learners' oral production in an information-gap task?
 - 1.3 How does pre-task planning time affect the **complexity** of EFL learners' oral production in an information-gap task?

Methods

Participants

The participants in the present study were 52 Saudi post-beginner level high school students in Riyadh (Arabic mother tongue), of whom 24 were female and 28 were male. They were between 16 and 19 years old at the time of data collection, and had learned their English more or less entirely in an instructed setting. Most of them had been learning English as a foreign language in Saudi schools for approximately six years. None had ever been to an English-speaking country, and they had had little opportunity to use English for communicative purposes outside the classroom. They can be described broadly as having a beginner level of proficiency in English. They were generally familiar with the concept of pre-task planning time through their classes. They were randomly distributed in two

groups: an experimental group with five minutes' unguided pre-task planning time and a control one without any planning time.

Materials

The materials used in this study were developed by Alshumaimeri (2010) after taking the permission of the author. It was piloted and tested by Alshumaimeri to check its validity and reliability to suite Saudi post-beginner students. It was a street map task incorporating a two-way information gap activity that required participants to convey information about how to get someplace on a map to a partner using a different version of the map. The names of the places and streets featured on the maps were similar to those of the plan of Riyadh where the participants live, to familiarize them with the task. However, the task maps do not reflect the actual maps of the actual part of Riyadh. The task was intended to be reasonably challenging but not too difficult for the participants. The language employed included common vocabulary related to the task.

Procedure

The participants were required to work in pairs to perform an information-gap task (the "street map task"). In this task, one student played the role of a tourist and the other, that of a tourist information officer. The participants were given two versions of a map and asked to exchange information about how to get to certain places on that map. The experimental group was given five minutes' unguided pre-task planning time, while the other group was asked to start doing the task as soon as they read the instructions, without any planning time. The conversations were audiotaped.

Data Coding

The audiotaped data was transcribed and coded to assess the fluency, accuracy and complexity of the learners' oral production.

Fluency Measurement

Repair fluency and *rate of speech* were used as measures in this study. Fluency was measured by counting the number of repetitions (of the same word or phrase), false starts (utterances abandoned before completion), reformulations (phrases or clauses repeated with some modification to syntax, morphology, or word order) and replacements

(substitution of one lexical item for another). This coding system follows that used in a number of prior studies, (e.g., Foster & Skehan, 1996; Skehan & Foster, 1999; Elder & Iwashita, 2005). With regard to repair fluency, the lower the core, the lower the number of false starts, repetitions, reformulations, or replacements, and thus the higher the fluency.

With regard to speech rate, following several previous studies (Tavakoli & Skehan, 2005; Kawauchi, 2005; Mochizuki & Ortega, 2008; Guar-Tavares, 2008), the number of words per minute was counted. Number and length of pauses were not used as measures of fluency in this study because of the nature of the task, which requires participants to look frequently at the maps in order to give directions. Pausing in these circumstances is thus more likely to be a reflection of the need to look at the map than of fluency.

Accuracy Measurement

Accuracy was measured by calculating the *number of error-free clauses* and the *number of errors per 100 words*. All errors in syntax, morphology, and lexical choice were counted. The same measures have been used in some previous studies (e.g., Skehan & Foster, 1997; Mehnert, 1998; Rutherford, 2001; Yuan & Ellis, 2003; Sangarum, 2005; Guar-Tavares, 2008).

Complexity Measurement

Complexity of productions was measured by calculating the *number of clauses per AS-unit* and the *number of words per AS-unit*. The *AS-unit* was proposed by Foster, Tonkyn, and Wigglesworth (2000) as a standard tool for the analysis of spoken data in second and foreign language acquisition research. It was elaborated from the T-unit, which is defined as consisting of one independent clause together with whatever dependent clauses are attached to it (Richards, Platt, & Platt, 1996), in order to deal with the fragmentary and elliptical nature of oral discourse. Foster et al. define it as a single utterance consisting of an independent clause or sub-clausal unit together with any subordinate clause(s) associated with either. Various recent studies (Ellis & Barkhuizen, 2005; Tavakoli & Foster, 2008; Norris & Ortega, 2009; Ahmadian, 2011; Vercellotti, 2012) have clearly shown the AS-unit's accessibility and applicability to empirical spoken data. Among them, Ellis and Barkhuizen (2005) used it in segmenting

monologic oral narratives produced by university-level second language learners.

Results

To answer the research questions, the data was

submitted to statistical analysis by SPSS. Two independent-sample t-tests were used to measure and compare progress in fluency, accuracy, and complexity between the experimental group (the planning condition) and the control group (the no-planning condition).

Table 1: shows independent-sample t-test results for fluency across the two groups.

Repair Fluency	Group	Mean	Std. Deviation	t-Value	Sig. (Two-Tailed)
Repetitions	Pre-task planning	5.3846	4.725 06	0.124	0.00
	No planning	11.5385	6.445 03		
False starts	Pre-task planning	2.2308	3.178 78	2.528	0.015
	No planning	4.1538	2.221 57		
Reformulations	Pre-task planning	0.7692	1.210 21	3.545	0.01
	No planning	1.8462	0.967 15		
Replacements	Pre-task planning	2.6154	1.626 70	2.468	0.017
	No planning	3.8462	1.953 30		
Total	Pre-task planning	10.076 9	5.979 45	5.649	0.00
	No planning	21.6154	8.527 96		

To address the first question, we can compare repair fluency and its components across the two conditions. As can be seen in Table 1, the planning group showed better fluency, producing fewer repetitions, false starts,

reformulations, and replacements (M = 10.0769) than the no-planning group (M = 21.6154). There was a statistically significant difference at the $p < .05$ level [$t = (5.649)$, $p = 0.00$].

Table 2: shows independent-sample t-test results for speech rate across groups.

Speech Rate	Group	Mean	Std. Deviation	t-Value	Sig. (Two-Tailed)
Words/minute	Pre-task planning	102.267	43.08189	3.170	0.003
	No planning	70.143	28.53592		

As seen in the table, planners significantly outperformed non-planners in speech rate, as in repairs [$t = (3.170)$, $p = 0.003$]. That is, learners produced faster speech when given planning time

than when deprived of it.

Next, to address the second question, the attempt was made to determine whether the accuracy of second language output varies by planning condition.

Table 3: shows independent-sample t-test results for accuracy across the two groups.

Accuracy	Group	Mean	Std. Deviation	t-Value	Sig. (Two-Tailed)
Error-free clauses	Pre-task planning	65.0769	30.579 63	3.240	0.002
	No planning	40.0385	24.852 33		
Errors per 100 words	Pre-task planning	2.9231	1.916 73	3.868	0.001
	No planning	9.7692	8.819 56		

As seen in Table 3, all means favored the planning group, which produced more error-free clauses (M = 65.0769) than the no-planning group (M = 40.0385). The planning group also produced fewer errors (M = 2.9231) than the no-planning group (M = 9.7692) at the $p < .05$ level [$t = (3.240)$, $p = 0.002$]. Finally, there was a difference between the two

groups in number of errors per 100 words, significant at the $p < .05$ level [$t = (3.868)$, $p = 0.001$].

To answer the third question, complexity was measured by the number of clauses and words per AS-unit.

Table 4: shows independent-sample t-test results for complexity across groups.

Complexity	Group	Mean	Std. Deviation	t-value	Sig. (Two-Tailed)
Number of clauses per AS-unit	Pre-task planning	1.3692	0.319 05	2.378	0.022
	No planning	1.1988	0.177 88		
Number of words per AS-unit	Pre-task planning	6.141	1.187 79	2.551	0.014
	No planning	5.1568	1.568 64		

A brief look at the mean scores for complexity in Table 4 tells us that planners outperformed non-planners on complexity. The mean score for number of clauses per AS-unit produced by planners ($M = 1.3692$) was higher than that for non-planners ($M = 1.1988$). The same result was found for number of words per AS-unit, with the planning group ($M = 6.141$) outperforming the no-planning group ($M = 5.1568$). Thus, the results of the analysis by independent-sample t-test indicate that planners significantly outperformed non-planners with respect to all complexity measures: number of words per AS-unit at the $p < .05$ level [$t = (2.551)$, $p = 0.014$] and number of clauses per AS-unit at the $p < .05$ level [$t = (2.378)$, $p = 0.022$].

Discussion

The present study has shown that when language learners are given some time to prepare before performing an information-gap task, their fluency is significantly enhanced. This finding is consistent with the results of many previous studies on this topic (Crookes, 1989; Foster & Skehan, 1996; Foster, 1996; Wendel, 1997; Wigglesworth, 1997; Mehnert, 1998; Ortega, 1999; Tajima, 2003; Sangarum, 2005; Skehan & Foster, 2005; Tavakoli & Skehan, 2005; Gilabert, 2007). Ellis (2003) stated in a review of work in the field that pre-task planning was found to assist fluency in all studies involving interactive tasks but in only four of six studies involving monologic tasks. However, both monologic studies (Wigglesworth 1997, 2001; Elder & Iwashita 2005) reporting no effect of planning on fluency involved a testing context. When foreign language learners given pre-task planning time can use it to plan for the task and reduce their processing load. A likely explanation for this effect is that pre-task planning helps planners set goals and make use of time given to organize the content of what they are going to say.

As discussed above, some previous studies (Crookes, 1989; Wendel, 1997; Ortega, 1999; Wigglesworth, 2001; Rutherford, 2001; Elder & Washita, 2005; Gilabert, 2007) do not agree on the presence and nature of an effect of pre-task planning on accuracy. The present study, which finds an enhancing effect, is consistent with many previous studies (Foster & Skehan, 1996; Mehnert, 1998; Yuan & Ellis, 2003; Tajima, 2003; Tavakoli & Skehan, 2005; Kawauchi, 2005; Mochizuki & Ortega,

2008; Guara-Tavares, 2008). The present results support the claim that giving foreign language learners pre-task planning time helps them focus on form, resulting in more accurate language production, since pre-task planners can make use of planning time to attend to form and “edit” their oral productions. Through pre-task planning, foreign language learners may be encouraged and enabled to direct some of their attention towards problems and try to repair them.

Regarding complexity, the current results support the presence of a beneficial effect of pre-task planning time on the complexity of foreign language learners’ oral production, placing them in line with a number of previous studies (Crookes, 1989; Foster & Skehan, 1996; Foster, 1996; Ortega, 1999; Yuan & Ellis, 2003; Tavakoli & Skehan, 2005; Guara-Tavares, 2008). This enhancement can be explained by the fact that planners tend to focus on meaning in order to plan the content of their performance and thus to produce more complex language. Pre-task planning time facilitates the processing and planning of the content and organization of the output. It may also help increase learners’ confidence.

It has been hypothesized that various aspects of language compete for limited attentional resources due to limitations to attention capacity during task performance and that as a result one aspect of language production may get more attention and thus improve more than others (Skehan, 1998; Ellis, 2005). This phenomenon is known as the *trade-off effect* (Skehan & Foster, 1997; Yuan & Ellis, 2003). Ellis (2003) has suggested that there might be fewer or weaker trade-off effects if language learners are given more time to perform a task. In other words, we may enhance learners’ capacity for attention to the exigencies or needs of a task by giving them time in advance to plan for the performance of the task.

Regardless of the reason for these attentional constraints, Ellis (2005) states that giving learners some time to plan the task is a good opportunity to reduce attention load during performance. When planning time is available, second language learners will be able to allocate attention to various aspects of the planned utterance to retrieve information from working memory before performing the task, resulting in more proficient speech. Since second and

foreign language learners have limited language proficiency in the language being learned, they are not able to allocate adequate attention to all aspects of oral production simultaneously. Therefore, giving learners the opportunity to plan for the production task may reduce the cognitive load involved by increasing attentional capacity. Thus, the present study, like some previous studies (Foster & Skehan, 1996; Wigglesworth, 2001; Kawauchi, 2005; Tavakoli & Skehan, 2005) has found support for the idea that pre-task planning enhances the fluency, accuracy, and complexity of foreign language learners' oral production. However, other studies (Mehnert, 1998; Rutherford, 2001; Tajima, 2003; Yuan & Ellis, 2003; Elder & Iwashita, 2005; Gilabert, 2007; Mochizuki & Ortega, 2008; Guara-Tavares, 2008) found no effect of planning on some measurements of the three dimensions (i.e. fluency, accuracy, and complexity) of language production. One possible explanation for the non-significance of planning time in those studies may be certain learner, setting, and task variables, as discussed in the following paragraphs.

One learner variable that might play a role is the participants' familiarity with task planning. That is, learners in studies which found no effect of planning on some output measures might not have been able to make good use of planning time if they simply did not know what to do due to unfamiliarity with planning conditions.

Turning to task variables, the tasks used in the studies finding no effect in some fields may have not been challenging to induce learners to make use of planning time to perform the task. Some types of task may also lead learners to focus on the task sequence or content rather than the form, which in turn might affect the accuracy and complexity of these learners' oral production.

Setting might play a role as well. Ellis (2003) reported that two of six monologic studies found no effect of planning time on the fluency of production. As both these studies were conducted in a testing context, their ineffectiveness might be due to a feeling on the part of learners that they were being assessed, which in turn might push them to focus on producing more accurate language at the expense of fluency and complexity.

A final possible explanation for the non-significance of planning time in some previous studies may be the variety of measures they adopted, which may have resulted in less consistency between their results (Ortega, 1999; Ellis, 2005). Consistent measurements will give us the ability to accurately observe any effect of pre-task planning and come to agreement on and clear understanding of its effect.

Conclusion

On the basis of the results of the present study, it can be concluded that when foreign language learners are given time for pre-task planning, they make use of that time to plan lexical and communicative strategies for getting meaning across. Pre-task planning was found to assist learner fluency as they made use of the time available to reduce processing load by preparing content in advance. The present study has provided some evidence that planning time benefits the accuracy of the language produced as well. That is, foreign language learners can make use of planning time to access their second language knowledge more effectively and thoroughly, resulting in more accurate production. Finally, the beneficial effect of pre-task planning time for the complexity of foreign language learners' oral production was evident as well. When language learners are given pre-task planning time, they can better plan what they want to say, giving them confidence to try more complex productions.

The findings of the present study thus call into question the assumption of a trade-off effect, since giving foreign language learners pre-task planning time positively impacts *all of* accuracy, complexity, and fluency. Research with more data analysis and consistent measurements is still needed to resolve this issue. Specifically, studies are needed that replicate the methods used here in different contexts. Studies have shown that different factors, such as familiarity with planning time, the nature of the task, and the nature of the setting, influence the extent to which planning time benefits fluency, accuracy, and complexity.

The current study also has valuable pedagogical implications and ideas for future research. Planning time is a practice with great potential to foster better language acquisition. It might be recommended that EFL teachers incorporate planning time regularly into their lessons in order to familiarize language learners

with planning time techniques and let them experience their benefits. We may see better gains in language production by learners if they learn to use planning time to more effectively plan tasks and achieve more fluent, accurate, and complex oral language production. EFL teachers need to be trained to incorporate planning time into their teaching activities and better implement it in the classroom. The findings of the present study support the contention that offering pre-task planning time before task performance to language learners can lead to better language production, which in turn can contribute to the success of a task-based learning and teaching methodology. In short, the present study suggests that planning can be an effective factor in the success of language learning tasks in EFL and other second language classrooms.

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Appendix: Information-gap task

Street Map Student A

Work in pairs.

You are going to be two different people.

1. You are a tourist. Telephone the Tourist Information Office and ask for directions to:
 - a) Railway Station.
 - b) The Old Castle.
 - c) The National Museum.

Mark the three places on your map. Ask him to repeat the information if you don't understand.

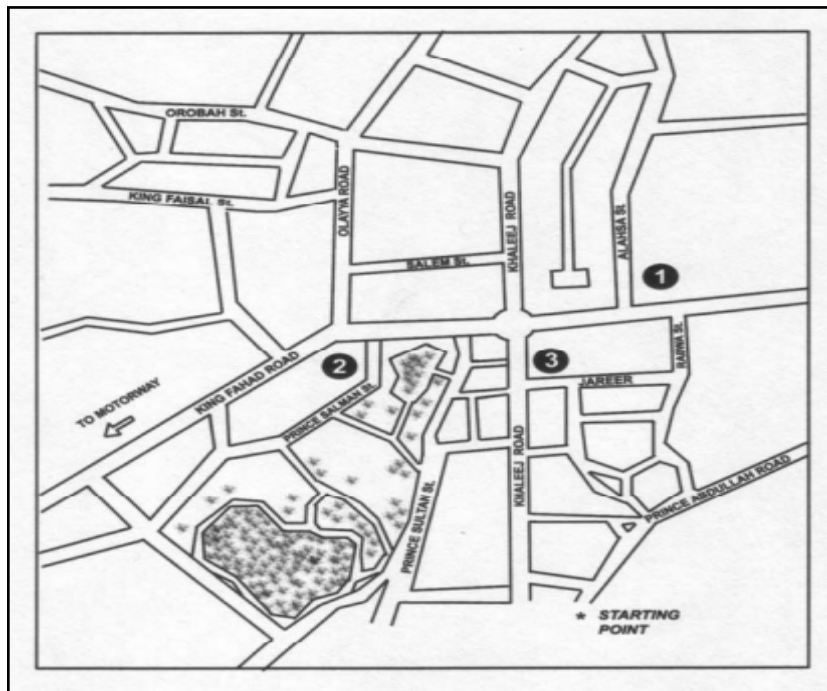
Begin at "STARTING POINT".

2. You are a Tourist Information Officer. A tourist telephones you to ask where three places are. He has a map. Use your map to describe where the places are. He is at "STARTING POINT".

DO NOT SHOW YOUR MAP TO YOUR PARTNER.

Note:

1. Sports Centre.
2. King Fahd Library.
3. The Shopping Centre.



Street Map Student B

Work in pairs.

You are going to be two different people.

1. You are a Tourist Information Officer. A tourist telephones you to ask where three places are. He has a map. Use your map to describe where the places are. He is at “STARTING POINT”.
2. You are a tourist. Telephone the Tourist Information Office and ask for directions to:
 - a) The Sports Centre.
 - b) King Fahd Library.
 - c) The Shopping Centre.

Mark the three places on your map. Ask him to repeat the information if you don't understand. Begin at “STARTING POINT”.

DO NOT SHOW YOUR MAP TO YOUR PARTNER.

Note:

1. Railway Station.
2. The Old Castle.
3. The National Museum.

