The Impact of Planning on Accuracy and Complexity in Oral Production of Male and Female English as a Foreign Language (EFL) Learners

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Abstract
Over the years, researchers have been trying to help learners to approach a task in an effective way to promote their second language (L2) production and development. Researchers have found that giving planning time to learners can improve their L2 development (Foster & Skehan, 1996, Wendel, 1997). However, a few current findings about task planning are non comprehensive and nonsystematic. To fill this gap, this study examined the effects of both planning conditions and gender on learners’ oral performance in terms of accuracy and complexity among 40 Iranian students at an intermediate level. A total number of 40 participants based on an interview were selected for this study. Based on planning conditions, the participants were assigned to planning and non planning groups. Secondly, they were divided into male and female groups. The findings revealed that 10-minute planning, in comparison with no planning time, improved the accuracy and complexity of participants’ oral performance. Also, results regarding the effects of gender clarified that gender did not have any effect on the participants’ oral performance in terms of accuracy and complexity.

Keywords: Planning, Accuracy, Complexity, Oral production

1. Introduction
Willis (1996) suggests the use of tasks as the main focus in language classrooms, claiming that tasks create a supportive methodological framework. Planning was considered as an essential part of conducting a task. Planning not only can be considered "a natural part of daily life", but also can be assumed as an important factor in the process of language production (Crookes, 1989). The theoretical rationale behind the pre-task planning as a condition to complete a task is related to the information-processing models that were mentioned by Skehan (1996, 1998). Based on this model, humans have a limited attention capacity to consider different aspects of information and process them simultaneously. Therefore, considering one aspect of performance may cause to decrease attention elsewhere. Pre-task planning was used before (L2) tasks may make communication easier and reduce the pressure on the learners' limited attention capacity. Based on this theory, some studies have been conducted and the results have showed that planning improves fluency and complexity, but mixed results have been reported for accuracy (e.g. Crookes, 1989; Foster & Skehan, 1996, 1999; Menhert, 1998; Ellis, 2009).

Some current findings about task planning are not comprehensive and systematic. Wendel (1997) suggested that this was due to some factors: a) A wide variety of tasks were used across studies; b) [Pre-task] planning was not clearly defined and was not operationalized in the same way across studies; c) In each case, it was assumed that planning took place, but investigators had no clear idea as to what cognitive events were actually occurring during the planning period; d) The studies did not uniformly evaluate the language production on the same measures and those studies that did evaluate production on the same measure (e.g. Accuracy) did not use identical operationalizations of those measures (Wendel, 1997, pp. 60-61).

Considering these facts show that there is an urgent need for more research on pre-task planning, so as to validate the potential of pre-task planning in promoting L2 production and improvement. Also, new measurements have been used to evaluate the effect of planning time on L2 production which focuses on different aspects to measure accuracy and complexity. Furthermore, gender as a factor related to individual differences has been taken into account. This inconsistency can be attributed to different factors like the time of planning, types of task, teacher's role, type of planning, and other factors that can have their own effects on the finding of the previous studies. Ellis (2009) attributes
these inconsistencies to different factors like the task design, planning, L2 production, individual differences, and the relations among them.

2. Review of related literature

Over the last decades, there have been a growing number of studies to investigate different aspects of L2 learners' performance tasks (Yuan & Ellis, 2003). One of the main foci that has attracted attention and proved to have some significant effect on L2 production is planning. The entrance of planning into L2 research dated back to the late 1980s. One of the pioneers in studies in the realm of task-based method is Rod Ellis. Ellis (1987) conducted a research to investigate whether the amount of time available for L2 learners for pre-task planning and co-planning influence their morphological accuracy in narrative tasks. However, this study was not originally conducted to clarify two kinds of planning (pre-task planning and co-planning). Seventeen intermediate ESL learners who participated were required to perform a task under three different conditions. The results showed that the amount of time given to learners can influence the accuracy of their oral performance. Ortega (1999) studied the effect of pre-task planning on advanced English learners of Spanish. She asked them to simply plan what to say in their oral picture-based narrative task and found that while fluency and complexity significantly improved, accuracy improved only in some measures. Foster and Skehan (1996) investigated the effect of detailed and undetailed pre-task planning on oral performance. They compared the effects of three kinds of pre-task planning on complexity, accuracy, and fluency. Three types of tasks which included personal information, narrative task, and decision-making task were implemented by each group. They distinguished that detailed pre-task planning was superior to undetailed pre-task planning in complexity and fluency, not accuracy.

Other researchers focused more on specific aspects and divided instructions for what to plan for, producing both improved complexity and fluency. For example, Mehnert (1998) only used intermediate learners of German, under 1-, 5-, and 10-minute pre-task planning periods, to plan both what to say and how to say it before leaving phone messages. She realized that accuracy was improved most significantly with 1 minute of planning time, but complexity and fluency improved more with 10 minutes. Mochizuki and Ortega's (2008) study concentrated on the relationship between proficiency level and pre-task planning condition. They found that the pre-task planning condition did not have any effects on participants' oral performance at the beginning level. Yuan and Ellis (2003) focused on the effects of pre-task planning and on-line planning on oral performance. They found that pre-task planning group produced more syllables than other groups and was the most fluent group. In terms of accuracy, the on-line planners produced more accurate speech than the pre-task planning group, supporting Wendel's claim.

Foster and Skehan (1999) conducted another study in which they considered some new factors. They investigated the effects of two different foci of pre-task planning which included content focus and language focus on oral performance. They also studied the effects of two sources of pre-task planning which included teacher-fronted planning and group planning on speech production. The result showed that solitary pre-task planning group was superior to other groups in complexity and fluency. In relation to accuracy, only teacher-fronted pre-task planning was found significantly better than no planning group. In addition, teacher-fronted pre-task planning condition was significantly better than the group and solitary pre-task planning. In terms of fluency, group-based planners seemed less fluent and the solitary pre-task planning was superior to other groups. Mochizuki and Ortega (2008) investigated whether pre-task planning that includes grammatical guidance to focus on a specific L2 form might be a beneficial pedagogical choice for learners at the beginning level. They found that the participants who were assigned to guided planning group produced more accurate relative clauses in their oral speech in comparison with participants who assigned to unguided planning group and participants who were in no planning group. However, contrary to expectations, planning conditions did not lead to any significant complexity or fluency in oral speech at beginning level.

Skehan (2003) stated that there is not systematic research which investigates the effects of learner differences on tasks. However, he stated that there are some studies about individual differences (gender, proficiency level, and interlocutor familiarity) but they have not been considered as central to the research tradition. Individual difference is an important issue that was considered by Ellis (2009) in his research. Most previous researchers focused on proficiency level, but other factors were not considered in depth. One of individual differences that must be taken into account is gender. Rahimpoor and Yaghoubi (2008) studied the effect of gender as an instance of individual differences in terms of accuracy, complexity and fluency of learners' oral performance. They hypothesized that teacher gender and student gender can have some effects on their final oral production. Male and female participants were required to talk about City, Population, Love and Marriage, selected among other topics based on the participants' interest. The results of the study showed that, a) participant gender and its interaction with teacher gender were not considered as a significant factor; b) no significant differences in relation to accuracy were found in terms of neither participant nor teacher gender; c) participants in front of male teacher produced more accurate speech.

Farahani&Khaghani (2008) considered two individual factors in his study. They conducted a research to find the effects of task-based techniques, gender, and different level of proficiency on oral proficiency. 162 One hundred and sixty two English learners of both genders who were at intermediate and advanced levels participated in the study. They were divided into control and experimental groups. Then each group was divided into two groups of males and females. Learners were required to perform different kinds of tasks like information-gap tasks, opinion-gap tasks, and reasoning-gap tasks. The results demonstrated that there was no significant difference between male and female learners under the task-based approach. It showed that gender did not have any effect on oral performance. In terms of different level of
proficiency, results demonstrated that different levels had a significant effect on speaking under task-based techniques. Advanced level learners benefited more and outperformed intermediate level learners.

3. Method

3.1 Participants

Forty participants (20 males and 20 females) at an intermediate level who studied English as a foreign language at Shokuh Institute, Rasht, Guilan enrolled in the study. They were between the ages of 16 to 26 years old. They have been studying English for 3 years in the institute and none of them had ever been to an English speaking country. They used English for real communicative purposes rarely outside the institute. Based on the final exam as an achievement test, their final score ranged from 51 to 62 (maximum=65). The final exam was based on Spectrum books. The test included 15 listening tests, 30 grammar tests, and 20 reading tests.

3.2 Two tasks

Pre-task materials included the practice task and target task. The practice task was employed to make learners familiar and ready for the target task that was given to the learners in following weeks. The tasks (practice task and target task) were based on the narrative tasks and picture strips. The main task was composed of six pictures. Learners were required to tell the story from the beginning to the end and there was an opportunity to make connections among the pictures (see Appendix II).

3.3 Research Design

In this study a 2×2 research design was used (table 3.1). Planning condition as the first independent variable was divided into 10-minute planning and no planning conditions. The second independent variable to be investigated was gender. Designing planning conditions and gender and considering their effects on accuracy and complexity of learners’ oral performance were the targets of this study. Accuracy was measured by 1) the percentage of clauses that does not contain any errors, 2) the number of errors per 100 words, 3) the percentages of correctly used verbs in respect to tense, aspect, modality, and subject-verb agreement. Complexity was measured by; 1) syntactic complexity in which the number of clauses divided to the number of t-units; 2) syntactic variety in which the total number of verb forms were measured.

3.4 Procedure

Participants performed similar picture strip tasks for 4 sessions (2 weeks) to become familiar with this kind of task. This process helped learners to control their stress and show their real abilities in the final task. Also, this provided the opportunity for the researcher to get more accurate measure of accuracy and complexity of oral performance because they were not measured just with one task. The type of task was similar, but the picture strips were different from task to task.

Data was collected by the researcher in the same class where students studied in the institute after 4 sessions of practicing. This familiar environment helped the learners to feel that everything is normal and that there is no difference between the final task and practice ones. However, the big difference with the practice sessions was that the researcher and each participant were alone in the class, and there was no one else to cause the anxiety to increase. It was really important to put participants at ease and prevent stress. After greeting and small talk, learners began narrating the story based on the planning condition. A voice recorder was in front of each of the learners and their speech was recorded while they were doing the task.

Learners did the task under no planning and 10-minute planning. Under the first condition, learners were given the story and asked to narrate the story after looking at pictures (after 30 seconds). Under 10-minute planning, the learners were given 10 minutes for planning their own speech and arranging their thoughts. The participants in the two groups were permitted to take notes, but they were informed that they are not allowed to use them when they want to do the task. However, most of them did not use any paper to take notes, but used other strategies to organize their speech.

3.5 Data Collection Procedure

The research was conducted based on two different conditions (no planning and 10-minute planning). Participants performed similar picture strip tasks for 4 sessions (2 weeks) to become familiar with this kind of task. This process helped learners to control their stress and show their real abilities in the final task. Also, this provided the opportunity for the researcher to get more accurate measure of accuracy and complexity of oral performance because they were not measured just with one task. Besides, the type of task was similar, but the picture strips were different from task to task.

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3.6 Data Analysis

In this research four dependent and independent factors were considered. The dependent variables were accuracy and complexity. The independent variables included planning time and gender. A set of independent t-tests were utilized to
compare the complexity and accuracy mean scores of the two groups (planners and non planners) as well as the females' and males' planners. It separately illustrated the relationship between planning with accuracy and planning with complexity. It also clarified the relationship between gender and these two dependent factors (accuracy & complexity).

4. Results

It was important to document the homogeneity of the participants at the beginning of the study. An interview was administered for the sake of homogenizing the subjects prior to the treatment at the beginning of the study. An independent sample t-test was run on the results of the oral proficiency test to investigate the homogeneity of the subjects and the groups. The mean of the pre oral proficiency test for planning group was 4.06 and that for non-planning group was 3.95. The value that was considered as a critical number to compare the differences among groups known as p value was 0.05 in this study. The p value (0.063) >0.05 indicates that the two groups were not significantly different at 0.05 level in terms of their oral English proficiency prior to the treatment.

At first, accuracy was calculated based on each; 1) the percentage of clauses that does not contain any error, 2) the number of errors per 100 words, and 3) the percentages of correctly used verbs in respect to tense, aspect, modality, and subject-verb agreement. The mean of the three parts was then calculated and used for the final analysis. The means of accuracy scores for the planning and non planning groups were 18.11 and 14.88, respectively. There was a significant difference between the two groups in terms of mean. In addition, the p value of 0.00<0.05 indicates that the two groups were different and there was meaningful relationship between planning time and accuracy. In terms of complexity two aspects were considered. First, syntactic complexity was measured by dividing the number of clauses to t-units. Second, syntactic variety was calculated to measure the number of verb forms. The mean of the two scores was computed and used as complexity score in order to compare the two groups (planning and non planning group). The means of the complexity scores for the planning and non planning groups were 4.5 and 3.09 respectively. In addition, the p value obtained is 0.000 which is lower than 0.05 indicating that the mean differences of complexity score between the two groups is significantly meaningful. The results can be seen in the following table.

<table>
<thead>
<tr>
<th>group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy score planners</td>
<td>20</td>
<td>18.1125</td>
<td>.80898</td>
<td>.18089</td>
</tr>
<tr>
<td>Non planners</td>
<td>20</td>
<td>14.8875</td>
<td>1.22064</td>
<td>.27294</td>
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<tr>
<td>Complexity score planners</td>
<td>20</td>
<td>4.5050</td>
<td>.47376</td>
<td>.10594</td>
</tr>
<tr>
<td>Non planners</td>
<td>20</td>
<td>3.0925</td>
<td>.38192</td>
<td>.08540</td>
</tr>
</tbody>
</table>

Gender was regarded as an independent variable that may have its own effects on oral performance. In terms of gender, participants were divided into male and female group. Then, the mean of each group was computed for comparison. The means of the accuracy scores for the female and male participants were 16.43 and 16.56, respectively. Using the p value to compare the two groups based on accuracy is 0.840 which is higher than 0.05 indicating that mean difference
between the two groups is not significant. The means of the complexity scores for the female and male participants were 3.81 and 3.78, respectively. The reported P value for comparing the complexity scores between male and female participants is 0.933 which is higher than 0.05 indicating that the mean difference between the two groups (males and females) is not significantly meaningful. The results can be seen in the following table.

<table>
<thead>
<tr>
<th>group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy score female</td>
<td>20</td>
<td>16.4375</td>
<td>1.87412</td>
<td>.41907</td>
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<tr>
<td>male</td>
<td>20</td>
<td>16.5625</td>
<td>2.02432</td>
<td>.45265</td>
</tr>
<tr>
<td>Complexity score female</td>
<td>20</td>
<td>3.8100</td>
<td>.76599</td>
<td>.17128</td>
</tr>
<tr>
<td>male</td>
<td>20</td>
<td>3.7875</td>
<td>.91290</td>
<td>.20413</td>
</tr>
</tbody>
</table>

Levene's Test for Equality of Variances

<table>
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<tr>
<th></th>
<th>F</th>
<th>Sig.</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>Std. Error</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equal variances</td>
<td>.620</td>
<td>.436</td>
<td>-.203</td>
<td>38</td>
<td>.840</td>
<td>-.12500</td>
<td>.61685</td>
<td>-1.37376</td>
</tr>
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<td></td>
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<td>Equal variances</td>
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<td>.841</td>
<td>-.12500</td>
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<tr>
<td>Complexity score</td>
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<td>.084</td>
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<td>.02250</td>
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<td>-.51694</td>
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<tr>
<td>Equal variances</td>
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<td></td>
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<tr>
<td>assumed</td>
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</table>

5. Discussion and Conclusion

This study sets out to explore the effects of pre-task planning and gender on accuracy and complexity of EFL learners' oral production in a narrative task. Subjects in the different groups (based on gender and planning time) performed the intended tasks under the conditions that were specified by the researcher. Therefore, it is important to note: (1) the discussion of the findings regarding pre-task planning on (a) the accuracy of participants' oral performance (b) the complexity of participants' oral performance, and (2) the discussion of findings related to the (a) the effect of gender on accuracy and (b) the effect of gender on complexity. The results of the present study illustrate that 10-minute pre-task planning had a positive effect on the accuracy of participants' oral performance and there was a significant difference between planning and non planning groups in terms of their performance on the oral test. The results of independent samples t-test indicated that there was a meaningful and significant difference between the planners and non planners in terms of the accuracy of oral performance (p ≤0.05). Planning time helps learners to pay attention to the form of their oral performance and decreases pressure on their mind. This is in accordance with the results reported in some previous studies that showed the significant effect of planning time on accuracy (e.g. Ellis 1987; Foster & Skehan 1996; Foster & Skehan 1997; Ortega 1999). However, the findings of some other studies are in contrast with this study (e.g. Crookes 1989; Wendel 1997; Yuan & Ellis 2003).

Yuan and Ellis (2003) stated that strategic planning has clear effect on fluency but not on accuracy. Also, they reported that unpressured within planning can promote accuracy. Levlet (1989) suggested that paying attention to grammatical morphology takes the second place to lexicalization in the process of formulation stage of speech act. Findings of this study are against these hypotheses and show the positive effect of planning on accuracy.

The findings of this study show the significant effect of pre-task planning on the complexity of participants' oral performance. The findings are in accordance with the findings of some previous studies (e.g. Foster & Skehan 1996;
The discrepancies in terms of complexity in studies can be attributed to different factors. Ellis (2009) mentioned that whether learners are learning language as a second or foreign language and in a classroom setting or laboratory setting does not have any effect on complexity. Also, task factors interact with planning to affect complexity, but the results are not clear. Foster and Skehan (1996) found richness in complexity for personal and narrative tasks not for making-decision tasks.

Planning variables can influence the findings about the effect of planning on complexity. First, the length of planning time was taken into account. Menhert (1998) reported no effect of this variable on complexity. Type of planning may have some effects. Mochizuki and Ortega (2008) found no effect of type of planning on complexity. However, there is some evidence that shows the significant effect of the degree of guidance provided during planning time on complexity. Foster and Skehan (1996) stated that detailed pre-task planning leads to more complex production. Nevertheless, there was not any guidance from teacher for participants in this study. Planning time by itself promoted the complexity of subjects' oral performance.

The results of the study show that gender does not have any significant effect on the accuracy of participants' oral performance. It is in line with O'Loughline (2002). On the other hand, it is against the findings of some previous studies (O'Sullivan 200; Rahimpoor and Yaghoubi 2008).

Findings of the present study illustrate that gender does not have any significant effect on the complexity of participants' oral performance. It is in line with O’Sullivan (2000), Rahimpoor and Yaghoubi (2008) who found no differences between oral performance of males and females. Also, this result is not supported by Levelet's (1989) formulation factors, where difference is accorded with addressee influence.

Effective use of pre-task planning in manipulating a task in a task-based syllabus can bring about beneficial results. Also, judicious use of planning time in pre-task phase by teachers can improve learners' oral performance. Studying different aspects of pre-task planning can help teachers to have better understanding of this phase and the strength of planning time in terms of learners' output. More study is required to find more conclusive results in terms of four skills. This research was conducted based on two assumptions. First, pre-task was separated from planning time to investigate which factor caused improvement in terms of accuracy and complexity of learners' oral production. Second, gender was considered as an independent factor that over the last decade as an "always present" (Sunderland, 2000, p. 203) variable, it seemed attractive for researchers as a source of variety in Second Language Acquisition (SLA).

The study demonstrated that 10-minute planning time had beneficial effect on the accuracy of participants' oral performance and led them to produce more accurate speech compared with the non planning group. It showed that speakers in the planning group laid emphasis on formulating linguistic forms and using appropriate words for better communication. Therefore, speakers in the planning group outperformed the members of the non planning group in terms of accuracy.

Complexity as another dependent variable to evaluate the participants' oral performance was studied, where participants in the planning group produced more complex sentences in comparison to the members of non planning group. The 10-minute planning time led participants to use a range of different tenses and clauses to convey the intended meaning, which helped them to outperform the members of non planning group.

Gender as an important moderator factor was also studied, where the effect of gender on the two dependent variables (accuracy and complexity) were focused. It was assumed that gender may have some effects on males and females oral performance. Results demonstrated that there was not any difference between males and females' oral performance regarding accuracy and complexity. Gender did not have any effect on participants' oral performance.

References


Appendixes

*Appendix I: practice task*

*Appendix II: target task*