

The Effect of Planning Time on Metacognitive Processes of Iranian EFL Writers

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Abstract – The present study was an attempt to investigate the effect of planning time on metacognitive processes of Iranian EFL writers. To achieve the goal of the study, the researchers sampled 63 participants out of 100 language learners who were studying at Safir Language Institute in Tehran based on their scores on writing. The participants were randomly assigned to three groups. The groups had to write on the prompts they were assigned. One of the groups had 10 minutes for planning and 20 minutes for writing, another experimental group, which was called extended pre-task planning, had 20 minutes for planning and 10 minutes for writing. The control group, on the other hand, had only 30 minutes to write on the topic they were given. The control group did not take any instructions regarding planning. The participants of the two experimental groups completed a questionnaire. This questionnaire which was made on the Likert scale was used to assess their metacognitive processing. The results of MANOVA analysis showed that planning time significantly affects the metacognitive processing of EFL learners in Iran.

Keywords: planning time, metacognitive processes, pre-task planning, extended pre-task planning

I. INTRODUCTION

The skill of writing has been the focus of attention by a lot of researchers since it is regarded as one of skills demonstrating literacy. The quality of writing depends on a kind of organization which involves the cognitive processes of planning, transcribing, and reviewing. This organization determines the quality of writing (Breetvelt, van den Bergh, & Rijlaarsdam, 1994, 1996; Roca de Larios, Mancho'n, Murphy, & Mari'n, 2008; van den Bergh & Rijlaarsdam, 1999, 2001, 2007). This article is a summary of a study which focused mainly on the effects of planning time on metacognitive processes. Planning has been investigated in different contexts and under various conditions in language learning.

Considering planning in writing, Hayes and Gradwohl Nash (1996) regard it as a kind of reflection which should be accompanied with other reflective processes such as decision making and inferencing. It has also been argued that the difference between planning and other reflective processes is that the environment of planning is completely different from that of the task. Hayes and Gradwohl Nash (1996) distinguish between two types of planning. The first type is *process* planning which is related to the writer and the strategies he/she uses to accomplish a given task. The second type is *text* planning which is related to the content and form of writing. Still another distinction has been made between different types of

writing planning on the basis of the discursal levels they involve. Whalen and Menard (1995) refer to types of planning such as *pragmatic* planning, *textual* planning, and *linguistic* planning. Pragmatic planning deals with the identification of audience and reason for writing, and developing a given topic. Textual planning, on the other hand, involves achieving coherence between idea sequences. Finally, linguistic planning involves the writer's attempts to solve a linguistic problem to formulate an idea.

Planning has been linked to interlanguage (IL) development. Selinker (1972) coined the term interlanguage. It refers to the developmental language between L1 and L2. Interlanguage has its specific features. Corder (1981) believes that interlanguage is a mixed language that involves some features of the learner's L1 and some features of his L2; but it is neither pure L1 nor L2 and has its own features. Ellis (1987) proposed that planning allows the learner to access the linguistic forms that have not been fully automated. Skehan (1996) also stated that planning frees up attentional resources and redirects them on the forms of language.

II. LITERATURE REVIEW

A. Metacognition

Metacognition has been defined as the knowledge that people have about their own thoughts (Bruning, Schraw, Norby, & Ronning, 2003; Ormrod, 2007) or the way that people monitor their thoughts and activities (Cary & Reder, 2002). It can be also said that it is "the deliberate conscious control of one's own cognitive actions" (Brown, 1980, p. 453). Brown added to the definition of metacognition by identifying multiple components such as "predicting, checking, monitoring, reality testing, and coordination and control of deliberate attempts to study, learn, or solve problems" (p. 454). Others have narrowed the definition of metacognition by stating that subcomponents of metacognition are planning, monitoring, and evaluation (Flavell, 1979; Schraw, 1998; Young & Fry, 2008).

From these definitions, one may conclude that metacognition could be defined as thinking about thinking. Even though there are different definitions of metacognition, a common theme exists within each definition. Hacker (1998) stated that the related themes consist of "knowledge of one's knowledge, processes, and cognitive and affective states, and the ability to consciously and deliberately monitor and regulates one's knowledge, processes, and cognitive and affective states" (p. 11).

Researchers have studied metacognition in an effort to better understand how it influences knowledge and learning (Brown, 1988; Palinscar & Brown, 1984). Researchers who study metacognitive activity in classroom situations have identified two perspectives: (a) knowledge about cognition, and (b) regulation of cognition or, in other terms, metacognitive knowledge and metacognitive regulation (Schraw, 1998). Flavell (1979) added to these perspectives in his metacognitive monitoring model that includes five areas: (a) metacognitive knowledge, (b) metacognitive experiences, (c) goals (or tasks), and (d) actions (or strategies). Metacognitive knowledge consists of knowledge or beliefs about the variables that act or interact in ways that affect cognitive activity or what we know about our own cognitive processes (Flavell, 1979; Schraw, 1998; Young & Fry, 2008). Metacognitive experiences are the cognitive or affective experiences that accompany an intellectual activity. Goals or tasks are the objectives of a cognitive activity and actions or strategies refer to the

thoughts or behaviors that are used to reach those goals (Flavell, 1979). Flavell also wrote that improving monitoring of these five areas would help learning strategies. Schraw (1998) supported Flavell in stating that learners need to be made aware of their own thoughts by monitoring cognitive processes, and their awareness can be improved by practice. It is important for educators to understand what metacognitive strategies are and also to help students learn about these skills (Baker & Brown, 1984). For example, some metacognitive strategies that teachers can teach their students consist of explaining the instructional material to themselves (Vincent et al., 2002), monitoring (Flavell, 1979; Haller, Child, & Walberg, 1988), asking questions, regulating (Haller et al., 1988), and being how to be aware of the cognitive process (Baker & Brown, 1984; Haller et al., 1988). It is important to understand what happens to students when they are learning to become aware of metacognitive strategies because teachers can then include these strategies in their own teaching. It is also important to understand what types of environments best facilitate improvements in these skills.

B. Task Planning

Planning time is a term which has been the focus of attention in many studies in both first and second language production (Wigglesworth, 1997). Most of these studies have their roots in L1 research aiming at developing cognitive models of oral production with planning as one of their components (Crookes, 1989).

Givon (1979) compared planned and unplanned L1 oral and written productions and the result of his comparison was two modes of production: the “pragmatic mode” and the “syntactic mode”. According to Givon (1979) adult L1 production has a loose coordination. This matter is comparable to the pragmatic mode. Givon (1979) also concludes that adult L1 planned production can be compared with the syntactic mode with high subordination and high use of grammatical morphology. Ochs (1979) investigated the effects of L1 planned versus unplanned discourse from a psycholinguistic point of view. The result of her study was that a number of features which exist in the discourse of three to four-year-old children show themselves in adults’ unplanned discourse. She found that planned discourse was based on knowledge which had been acquired or learned later in life. She hypothesized that whenever planning time is not available speakers rely on their early-acquired morphosyntactic structures and discourse skills.

C. Types of Task Planning

Ellis (2005) classifies task planning into two main types. The difference is in the time of planning. The first type of planning is *pre-task planning* in which planning takes place before performing the task. In this type of planning there is ‘preparatory attention’ which helps in performing actions with greater accuracy and speed. The second type of planning is *within-task planning*. Each of these types is divided into two other types.

Pre-task planning can be divided into *rehearsal* and *strategic* planning. In rehearsal planning, learners have the opportunity to “perform the task before the ‘main performance’” (Ellis, 2005, p. 3). In this type of planning, the first performance of the task is considered as a preparation for the main performance. Strategic planning, on the other hand, involves learners’ preparation of the content of the task they are going to perform. This type of

planning is the focus of the present study. In strategic planning, learners “have access to the actual task materials” (Ellis, 2005, p. 3).

Within-task planning has been also divided into *pressured* and *unpressured* planning. In the first one, learners are not usually given enough time to plan on-line, while in unpressured within-task planning they are given enough time to plan online.

The classification can be continued. There are still other types of task planning that may occur with both main types of task planning. The first one is related to the amount of guidance that is given to learners (i.e. *unguided* vs. *guided* task planning). In unguided planning, learners will be on their own in their planning; however, they may be given some advice on what to plan and how to plan (Ellis, 2005). The second sub-type is on the basis of *source of planning*. Skehan and Foster (1999) found that different sources of planning have an effect on the outcome of planning. The sources may include *teacher-led*, *group-based*, and *solitary* planning. The third sub-type of planning is the *foci of planning* which is related to the orientation of planning in terms of form and content. As a result, planning may be content-focused, form-focused, or both form and content-focused. It seems that this subtype is somehow related to the first sub-type (i. e. unguided vs. guided task planning) since guidance usually is on the form, on the content or both.

Various combinations of principal and sub-types of planning have been the focus of different studies. Some of the studies will be mentioned in the following sections of the present dissertation. But before considering these types of planning, it would be better to know what the theories of language learning process are to gain a more clear prospective regarding the subject.

D. Task Types in Studies on Task Planning

Concerning the role of task type in the effect of planning on language production, some studies have been performed. Foster and Skehan (1996) wanted to know whether various planning types for different task types lead to different levels of complexity, accuracy, and fluency. They used three task types in their study: personal information exchange, oral narrative and decision making. The personal information exchange had the least cognitive and linguistic load. They conclude that the personal information task led to the highest levels of accuracy at the expense of complexity. The oral narrative task led to the highest levels of complexity, but the lowest of accuracy. Finally, the decision making task generated useful levels of both accuracy and complexity. In the personal information task, fluency was the highest; in the other two tasks it was similar.

In another study by Skehan and Foster (1999), they used the same task types used in Foster and Skehan (1996). They came to similar conclusions and suggested that tasks which contain clearer structures result in higher fluency and accuracy, whereas those which are more cognitively and linguistically demanding result in greater complexity. Perhaps the result implies that task properties affect complexity, accuracy, and fluency.

III. METHODOLOGY

The present study aimed to examine the effects of planning time (pre-task, extended pre-task, and control) on the frequencies of five metacognitive processes during planning and

writing. To achieve the aim of the study, the researchers followed the methodology which is described in this section thoroughly.

A. Participants

The participants of the present study were selected from among the 100 advanced learners of Safir institute in Tehran. The 63 participants who were selected from among the 100 learner population were chosen on the basis of their scores on the writing proficiency test the researchers gave to them. The learners were at advanced level since they had already learned how to develop various genres of writing. These learners were able to develop various genres of writing such as descriptive and argumentative styles. They had also been instructed how to develop letters in various formats such as business, formal and informal letters.

Their mean age was 19 years. The age range was between 16 and 22 years. The sample comprised 63 female learners. None had ever been to an English-speaking country, and they had reported little opportunity to use English outside the language classroom. The participants could be considered a fairly homogeneous group of EFL learners in terms of their instructional background. Of course those participants who were not homogenous were deliberately put aside from among those who were going to take part in the study.

B. Instrumentation

The instruments which were used for this study could be divided into three major ones. In order to measure the writing proficiency of the participants and sample the learners who had average writing proficiency, the researcher gave them a prompt which was elicited from the TOEFL Writing. The prompt was an argumentative one which required them to activate their reasoning power. In other words, they were fully engaged in the writing task.

Next, some other instruments were used for practicing writing and teaching this skill which were selected from the prompts in Passages series written by Jack C Richards since it is a reliable and valid book. The writing tasks in the book were assigned to learners each session in order to develop their writing skills more. The prompts of this book were used for assigning writing tasks to the participants since they were interesting and the learners had enough capability to write on the assigned topics. The prompts which were chosen for teaching phase were selected from the ones existing in the Passages volume 2. The prompts were selected on the basis of the participants' needs and interests.

The testing instruments were selected from the prompts in TOEFL Test of Written English (TWE), Topics and Model Essays (2003). The prompts and topics existing in the book are really interesting and informative. Thus the researcher decided to use the prompts of this book to be sure of the participants' interest and knowledge to develop their writing assignments.

In order to assess the frequency of five metacognitive processes, the researcher used a questionnaire taken from an article entitled How do Planning Time and Task Conditions Affect Metacognitive Processes of L2 Writers? in the Journal of Second Language Writing. The questionnaire (Appendix A) was designed with items on an 8-point Likert-type scale, where 1 represented the least occurrence whilst 8 represented the greatest occurrence. The

researcher gave the questionnaire to three experts to check before the administration. Some of the items were changed by them to tailor the aims of the research. The complexity of multi-experimental conditions in this study made it difficult to construct a comprehensive questionnaire with many complex contingency questions. However the researcher made her best to make the most comprehensive and accountable questionnaire so that it fit the purpose of the study.

C. Procedures

The objective of the present study was to find out the frequencies of five metacognitive processes of the writers when they had varying amounts of time to plan (i.e., 10, and 20 minutes) during the planning stage and when they had varying amounts of time to write (i.e., 10, 20 minutes) during the writing stage. To achieve this goal, planning time had to be manipulated in the experimental task to create these conditions. Specifically, in the pre-task condition, the participants were instructed to plan their essay for 10 minutes before writing for 20 minutes. In the extended pre-task condition, the participants were instructed to plan for 20 minutes before writing for 10 minutes. The participants were shown a sample plan from pre-task planning and a more extended sample plan from extended pre-task planning. No other guidance for planning was provided. Such a design of the planning time conditions meant that the total time on the writing task was kept constant at 30 minutes, which was favorable since it aligned with an authentic classroom writing task. In order to separate the revision process from the planning and writing processes, all the participants were further instructed not to read, edit, or revise their essays during the planning and writing stages. The second objective was to examine the frequencies of metacognitive processes of the writers in three task conditions: the topic; topic and ideas; and topic, ideas, and macro-structure conditions. These task conditions were differentiated by varying the task instructions in three different essay prompts given to the writers. In the topic condition, the participants were only given the topic of the essay. This condition served as a control group since it modeled an authentic writing situation whereby writers were given the essay prompt to write about. In the topic and ideas condition, the participants were given the topic of the essay and some ideas for the essay task. The ideas were about benefits and harm international sports competition would bring. The benefits of sports competition included: 1. it promotes friendship and fosters goodwill among nations; 2. it brings economic benefits to the hosting country; and 3. it promotes good qualities in athletes such as team spirit, sportsmanship, perseverance, etc. The harm of sports competition included: 1. it stirs up tension among countries as every country wants to win; 2. athletes may use drugs to enhance performance; and 3. corruption may occur as athletes may be paid to lose games. In the topic, ideas, and macro-structure condition, the participants were given the topic of the essay, some ideas for the task, and the macro-structure for writing an argumentative genre. The macro-structure provided for the writers included these guidelines: 1. State your stand or viewpoint, 2. support your arguments with reasons or examples or facts, 3. propose counter-arguments and refute them, and 4. restate or reinforce your stand. The participants were reminded to make good use of the help given to them, if it was given. The participants were instructed to report the five main metacognitive processes on a questionnaire administered immediately after the writing experiment. To ensure that they understood the five metacognitive processes, the researchers explained what was meant by the generation of new ideas, organization of new ideas,

elaboration of new ideas, thinking about the essay structure, and thinking about the language aspects of the task.

IV. RESULTS AND DISCUSSION

There are five dependent variables in the study. So a MANOVA analysis was conducted and the following table shows the results of multivariate tests. A MANOVA analysis is used when there are more than several dependent variables in a study. The number of independent variables is not important in this type of analysis. In the present study, the dependent variables were the metacognitive processes which consisted of five categories. The independent variable was the planning time which was controlled in two types, namely, pre-task condition and extended pre-task condition. Table 1 illustrates the results of the MANOVA tests.

Table 1. *The Results of Multivariate Tests*

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.997	3535.480 ^a	5.000	56.000	.000	.997
	Wilks' Lambda	.003	3535.480 ^a	5.000	56.000	.000	.997
	Hotelling's Trace	315.668	3535.480 ^a	5.000	56.000	.000	.997
	Roy's Largest Root	315.668	3535.480 ^a	5.000	56.000	.000	.997
Planning Time	Pillai's Trace	1.716	68.814	10.000	114.000	.000	.858
	Wilks' Lambda	.006	133.797 ^a	10.000	112.000	.000	.923
	Hotelling's Trace	45.639	251.015	10.000	110.000	.000	.958
	Roy's Largest Root	42.814	488.077 ^b	5.000	57.000	.000	.977

a. Exact statistic

b. The statistic is an upper bound on F that yields a lower bound on the significance level.

c. Design: Intercept + Planning Time

In this table the "**Sig.**" value is .000, which means $p < .0005$. Also, the Wilks' Lambda value is .003. Therefore, we can conclude that the metacognitive processes were significantly dependent on planning time ($p < .0005$). There was a statistically significant difference in the use of metacognitive processes use based on the allocated time to planning in writing, $F(10, 112) = 134, p < .0005$; Wilk's $\Lambda = 0.006$, partial $\eta^2 = .923$. The table, therefore, shows that the metacognitive processes have been affected by the planning time in Iranian EFL setting.

Also based on the information in table 2, it can be inferred that the three conditions which were used in the study, that is, the control condition, pre-task planning condition, and extended pre-task condition significantly affected the use of metacognitive strategies in Iranian EFL learners. The table 2 includes the necessary information regarding this fact. As it can be seen the Wilks' lambda value is .006 which is significantly less than .05. Also the p-value is .000. Also the F-value is 133.79. This information shows that the three conditions have affected the use of metacognitive strategies. In the following sections the plots of the results have been demonstrated.

Table 2. *The Results of the Multivariate Tests*

	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Pillai's trace	1.716	68.814	10.000	114.000	.000	.858
Wilks' lambda	.006	133.797 ^a	10.000	112.000	.000	.923
Hotelling's trace	45.639	251.015	10.000	110.000	.000	.958
Roy's largest root	42.814	488.077 ^b	5.000	57.000	.000	.977

Each F tests the multivariate effect of Planning Time. These tests are based on the linearly independent pair-wise comparisons among the estimated marginal means.

a. Exact statistic

b. The statistic is an upper bound on F that yields a lower bound on the significance level.

V. CONCLUSION

The present study revealed that the task condition and planning time has a significant effect on metacognitive processing in EFL writers. There were three conditions regarding the planning time under which the advanced EFL writers had to develop their essays. Also the metacognitive processes were measured through giving the participants a questionnaire which had been used for measuring these processes in another study the summary of which was published in an article in journal of second language writing in Science Direct site. The findings of the present study confirmed that planning, both pre – task and extended pre – task planning will affect the metacognitive processing. The present study examined the task conditions (topic; topic and ideas; and topic, ideas, and macro-structure) on five metacognitive processes (generating new ideas, elaborating new ideas, organizing new ideas, thinking of essay structure, and thinking of language aspects of the task) in the planning and writing stages of Iranian EFL writers. The main results show that the planning time conditions had significant effects on these metacognitive processes.

This study sheds light on previous contradictory claims about writers' attentional focus during the planning and writing stages (e.g., Ellis & Yuan, 2004; Kellogg, 1988; Kormos, 2011; Ong, 2013; Ong & Zhang, 2010, 2013). Contrary to most researchers' assumption, pre-task planning did not reduce the cognitive demands placed on the writers during the composing stage. On the contrary, planning has caused the cognitive processing to increase. This fact is obvious by looking at the figures and tables which focus on the various types of time planning. As it can be seen, the extended pre – task condition was the first condition under which the metacognitive processes were at the peak. It means that the time duration in planning is very significant and important for the writers to develop their metacognitive processes and as a result develop essays with better qualities.

The results of the present study confirm Kellogg's (1990) Overload Hypothesis which advocates the effects of planning time conditions on the metacognitive processes. Kellogg states that planning time condition will affect the metacognitive processes and his hypothesis was confirmed by the results of the present study. The task condition also affected the metacognitive processes in this study.

In line with one of Ong and Zhang's (2010, 2013) speculations, the writers in both planning conditions (pre-task and extended pre-task) engaged in more on-line planning in comparison to the writers in the control group during the writing stage. The more on-line planning which occurred in the above-mentioned conditions involved only one metacognitive process, that is, thinking about language aspects of the task. Unlike Kellogg (1988), who had found that L1 writers in the planning condition focused their attention on translation during writing, the result of this study clearly shows that L2 writers in the planning conditions did not shift from planning to translate. Instead, they were very confined to planning for language aspects of the task during writing. It is crucial for writers to orchestrate between cognitive processes in order for them to produce good writing (Breetvelt et al., 1994, 1996; Levy & Ransdell, 1995; Roca de Larios et al., 2008; van den Bergh and Rijlaarsdam, 1999, 2001, 2007).

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Appendix A. Post-experimental Questionnaire for Pre-task, Topic, Ideas and Macro-structure Conditions

Name:

Please circle the number which best indicates you. 1 represents “Not at all” to 8 represent s “Very.”

1. How **useful** were **the ideas** given to you in the task?

Not at all Useful 1 2 3 4 5 6 7 8 Very Useful

2. How **useful** was **the macro-structure** of the essay given to you in the task?

Not at all Useful 1 2 3 4 5 6 7 8 Very Useful

3. **During planning**, how frequently did you find yourself thinking of **newly formed ideas** for the essay?

Never 1 2 3 4 5 6 7 8 All the time

4. **During planning**, how frequently did you find yourself thinking of **elaborating newly formed ideas**?

Never 1 2 3 4 5 6 7 8 All the time

5. **During planning**, how frequently did you find yourself thinking of **organizing newly formed ideas**?

Never 1 2 3 4 5 6 7 8 All the time

6. **During planning**, how frequently did you find yourself thinking of how to **organize the essay structure**?

Never 1 2 3 4 5 6 7 8 All the time

7. **During planning**, how frequently did you find yourself thinking of **language aspects of essay**, e.g., word choice, sentence structure, grammar?

Never 1 2 3 4 5 6 7 8 All the time

8. **During writing**, how frequently did you find yourself thinking of **newly formed ideas** for the essay?

Never 1 2 3 4 5 6 7 8 All the time

9. **During writing**, how frequently did you find yourself thinking of **elaborating newly formed ideas**?

Never 1 2 3 4 5 6 7 8 All the time

10. **During writing**, how frequently did you find yourself thinking of **organizing newly formed ideas**?

Never 1 2 3 4 5 6 7 8 All the time

11. **During writing**, how frequently did you find yourself thinking of how to **organize the essay structure**?

Never 1 2 3 4 5 6 7 8 All the time

12. **During writing**, how frequently did you find yourself thinking of **language aspects of essay**, e. g., word choice, sentence structure, grammar?

Never 1 2 3 4 5 6 7 8 All the time