

The Impact of Task Complexity on EFL Learners' Writing Production across Gender

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Abstract— *The current study investigates the impact of task complexity on EFL learners' writing production across gender. Task complexity is the inherent cognitive demands of the tasks imposed on the learners by the structure of the tasks. In this study, task complexity is investigated along the resource-dispersing variables of pre-task planning time, post-task editing time and prior knowledge across gender. This study tries to intertwine the concepts of task complexity and sociolinguistics (i.e. gender differences). This study was aimed to find out the effect of task complexity across the variable of gender of EFL learners' writing production which has been measured in terms of CAF i.e. complexity, accuracy and fluency. Therefore, the linguistics properties of 160 essays from EFL learners (80 males & 80 females) were analyzed on the CAF. The participants were selected from a homogenous group of EFL learners. A web-based syntactical/lexical text analysis software was employed to measure the CAF of the EFL learners' essays. This can provide useful information in field of foreign language learning for language planners, curricula designers, and teachers. Should this be done, it can contribute to improving EFL undergraduate students' ability to a level of writing competence that is more likely to be satisfactory. The findings of the study indicated statistically significant support for Robinsons' Hypothesis. Increasing resource-dispersing complexity by removing planning time, editing time and prior knowledge negatively affected the CAF of writing of both genders, male and female. In terms of gender, female groups significantly outperformed their male counterparts in most of the overall CAF writing scores along resource-dispersing of pre-task planning time, post-task editing time and prior knowledge in both low complexity and high complexity writing tasks.*

Keywords: Task Complexity, Resource-Dispersing, Writing Production, Gender differences.

I. INTRODUCTION

During the last few decades many theories about gender differences in language have appeared. Many linguists tried to explain different approaches to the use of language by members of two genders. Studies have suggested that men and women tend to favor distinct language features in expressing themselves (Lakoff 1975, Waskita, 2008, Matei, 2011, Subon, 2013, and Shirzad and Jamali, 2013). Lakoff (1975) revealed that women used linguistic features that reinforced their subordination. She further revealed that they were inclined to use some specific language features, such as lexical hedges, tag questions, empty adjectives, intensifiers, and emphatic stress. Some studies have extensively explored

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how gender differences influence written language (Shirzad and Jamali, 2013, and Waskita, 2008).

Research noting gender differences in academic achievement has been discussed in a variety of education and psychology journals. In general, girls mature faster and master verbal and motor skills (e.g., drawing) more rapidly than boys (Eggen & Kauchak, 2013). The study of gender differences in language production is important for several reasons. One reason is its relevance to psycholinguistics. It has been previously established that individual differences in maintaining attention on the production processes become especially apparent when a simultaneous second task also requires intentional resources (Jongman, Roelofs & Meyer, 2014).

While the issue of reading is received greater attention, there is a growing body of evidence that males and females also differ in writing ability (Camarata & Woodcock, 2006; Reynolds, Scheiber, Hajovsky, Schwartz, & Kaufman, 2015; Scheiber, Reynolds, Hajovsky, & Kaufman, 2015). Reynolds et al. (2015) noted that the issue of gender differences in writing skills has been overlooked. This study delved into differences in performance, if any, between boys and girls in terms of task complexity.

Specifically, the current study addresses the following main research questions:

- What is the effect of high task complexity on EFL learners' writing production across gender?
- What is the effect of task complexity along the resource-dispersing variable of \pm planning time on EFL learners' writing production across gender?
- What is the effect of task complexity along the resource-dispersing variable of \pm post-task editing time on EFL learners' writing production across gender?
- What is the effect of task complexity along the resource-dispersing variable of \pm prior knowledge on EFL learners' writing production across gender?

II. OBJECTIVES

This research aims to study the impact of task complexity on gender differences of EFL learners' writing production which has been measured in terms of CAF i.e. complexity, accuracy and fluency. The International high school students' performance of cause and effect essay writing task is taken as the population of the research. The task complexity was investigated along certain resource-dispersing variables, whereas resource-directing variables were be investigated in this study.



The theoretical model developed by Peter Robinson (2001), i.e. Cognition Hypothesis was applied in this study.

III. METHODOLOGY

The study was conducted on the ninth graders in four international schools in Riyadh City. At the time of data collection, the participants were studying Prentice Hall Writing Coach, by Pearson Education, Jeff Anderson and Kelly Gallagher (2012). Prior to the current research, they had studied how to write cause and effect essay. For the purpose of this study, a sample of 160 high school students (80 males and 80 females) following an American curriculum participated to find answers to the research questions. A Cause and effect essay writing task with different complexity levels was used as a data collection instrument to provide an in-depth information to uphold the validity of findings. This thesis utilised four essay-writing contexts; a) Writing Task, b) Writing Task+10 min pre-task planning time, c) Writing Task+10 minutes post-task editing time, and d) Writing Task+ prior knowledge. Context (a) is a high complexity task, whereas contexts b, c, and d are low complexity task. Each context was assigned to a certain group according to table 1.1.

Table 1.1 Research Contexts

Groups	Context
Male Students Group Code: (G1M)	High Complexity Task Task Code: M1HC
Female Students Group Code: (G1F)	High Complexity Task Task Code: F1HC
Male Students Group Code: (G2M)	Task+10 min pre-task planning time Task Code: M2PT
Female Students Group Code: (G2M)	Task+10 min pre-task planning time Task Code: F2PT
Male Students Group Code: (G3F)	Task+10 minutes post-task editing time Task Code: M3ET
Female Students Group Code: (G3M)	Task+10 minutes post-task editing time Task Code: F3ET
Male Students Group Code: (G4M)	Task+ prior knowledge (a familiar area) Task Code: M4PK
Female Students Group Code: (G4F)	Task+ prior knowledge (a familiar area) Task Code: F4PK

Key: G= Group, M= Masculine, F= Feminine, HC= High Complexity, PT= Planning time, ET= Editing time, PK= Prior Knowledge.

Before stage 1 starts, the researcher initially handed out a survey that was designed to gather personal information about each participant. During stage 1, students were given an IELTS task 2 essay to write. The aim of this task is to make sure that all the groups are homogeneous. The task was analysed according to the same CAF measures used in stage 2 i.e. using Lu (2012)'s Lexical and syntactical Complexity Analyzer and accuracy and fluency measures (see Data and Statistical analysis section). During Stage 2, the writing task was assigned to all groups; however, the extra variables of pre-task planning time, post-task editing time and prior knowledge were added to Cohorts 2, 3 and 4 respectively. During the 10 minutes pre-task planning time, participants

were encouraged to take notes and plan for the task during this time, but they were not allowed to begin writing the tasks until the 10 minutes planning time was completed. Subsequently, the participants had 40 minutes to complete each task, during which they were able to refer to the notes they had taken during the planning time. During the 10 minutes post-task editing time allowed for each task, participants were given a red pen, which was a different colour to the pens used in the writing of the tasks. Subsequently, the participants were instructed to edit the work that they had just completed. As for the Prior knowledge (a familiar area) groups, they were instructed for 4 sessions' time about the water pollution cause and effect on the environment. The participants of this group watched videos, listened to audios, read articles and invited to do research through the web. They were only told about the task after instruction sessions were done by teachers.

IV. RESULTS

The findings from this thesis, when viewed through the lens of Robinsons' Hypothesis, showed statistically significant support for Robinsons' Hypothesis. Increasing resource-dispersing complexity by removing planning time, editing time and prior knowledge negatively affected the production of writing. Alternatively, decreasing complexity along the resource-dispersing variables of planning time, editing time and prior knowledge, which facilitated complex language production. More complex tasks along resource-directing dimension pushed greater development of complexity and accuracy of language production whereas fluency was negatively affected. In contrast, resource-dispersing dimensions (e.g., including planning time, editing time, and prior knowledge), accuracy, fluency and complexity of production decreased when task is made complex along resource dispersing dimension. Besides, study concluded that there is statistically significant difference between males and females in terms of writing production along task complexity. Increasing resource-dispersing complexity by removing planning time, editing time and prior knowledge negatively affected the CAF of writing of both genders, male and female. In terms of gender, female groups significantly outperformed their male counterparts in most of the overall CAF writing scores along resource-dispersing of pre-task planning time, post-task editing time and prior knowledge in both low complexity and high complexity writing tasks

V. CONCLUSION

The study of task complexity and writing is a relatively under researched area, and the results from this thesis have shown that there is a rich vein of research to be mined, with potential contributions to acquisition, pedagogy, and a potential rethinking of the dialectic relationship between competing theories on complexity and output. The positive aspects form RQ have shown that under the correct conditions, students can benefit from increases in cognitive task complexity.



However, the results from this thesis have shown that the focus on complexity in writing production is potentially very detailed and difficult, with much consideration needing to be placed into the alignment of contributing variables if students are going to produce complex language under cognitive duress using limited attentional resources. For teachers and researchers to be able to control positive outcomes, much more work will be required to be able to remove some of the random nature of the current work.

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