

**THE EFFECT OF COGNITIVE FACTORS ON
WRITING PERFORMANCE AMONG ENGLISH
LANGUAGE AND LITERATURE STUDENTS AT
A PUBLIC UNIVERSITY IN JORDAN**

AYMAN MUSLEH DHIFALLAH ALSHAQAHIN

UNIVERSITI SAINS MALAYSIA

2019

**THE EFFECT OF COGNITIVE FACTORS ON
WRITING PERFORMANCE AMONG ENGLISH
LANGUAGE AND LITERATURE STUDENTS AT
A PUBLIC UNIVERSITY IN JORDAN**

by

AYMAN MUSLEH DHIFALLAH ALSHAQAHIN

**Thesis submitted in fulfilment of the requirement
for the degree of
Doctor of Philosophy**

July 2019

ACKNOWLEDGEMENT

I extend my sincere respect and gratitude to my supervisor, Dr. Paramaswari Jaganathan for her assistance, patience, support, and cooperation. I will never forget her sincere effort that made me read through the drafts of my work and the insightful comments and suggestions she provided, which enriched the quality of the thesis. A special word of appreciation goes to my previous supervisors from Universiti Sains Malaysia (USM) for their guidance and advice. I am indebted to my late father (Musleh) for whom I always pray as he has sacrificed a lot for the sake of my family. He was eager to see me being a PhD graduate. I am grateful to my late mother (Karmah) for her patience, support, and encouragement throughout the years of my study. I also extend my thanks to my brothers and sisters. Last, but not least, I would like to express my deepest gratitude and sincere thanks to my dearest (Hend) wife for her love and support that pillared me with the courage to stand all the hardships, trials, and tribulations I faced during my study. Also, I must here extend my deepest respect to the former dean, Prof. Tengku Sepora and Prof. Madya Dr. Salasiah Che Lah the Dean of the School of Languages, Literacies and Translation at USM , who supported me and encouraged me to continue my work despite all the challenges I faced throughout my tenure. All this endurance is for you, my beloved children, Riad and Ghina.

TABLE OF CONTENTS

ACKNOWLEDGEMENT	ii
TABLE OF CONTENTS.....	iii
LIST OF TABLES	viii
LIST OF FIGURES	x
LIST OF ABBREVIATIONS	xi
ABSTRAK	xii
ABSTRACT	xiv

CHAPTER ONE - INTRODUCTION

1.1	Introduction	1
1.2	Background of the Study.....	5
1.3	The History of Education in Jordan	7
1.3.1	The System of Higher Education in the Hashemite Kingdom of Jordan.....	10
1.3.2	The Status of English as EFL in Jordan	11
1.4	Statement of the Problem	12
1.5	Research Objectives	16
1.6	Research Questions	17
1.7	Significance of the Study	17
1.8	Scope and Limitations of the Study	19
1.9	Definitions of Key Terms.....	19
1.10	Chapter Summary.....	21

CHAPTER TWO - LITERATURE REVIEW

2.1	Introduction	22
-----	--------------------	----

2.2	The Writing Skill	22
2.3	Writing and Cognition	29
2.4	The Writing Process	34
2.5	The Steps of Writing Process	41
2.5.1	Planning	41
2.5.2	Formulating	43
2.5.3	Revising	47
2.5.4	Editing	49
2.5.5	Publishing	49
2.6	Process-oriented Approach to Writing	50
2.7	Genre-oriented Approach to Writing	52
2.8	Types of Writing	54
2.8.1	Expository Writing	54
2.8.2	Descriptive Writing	55
2.8.3	Persuasive Writing.....	56
2.8.4	Narrative Writing.....	56
2.9	Writing Difficulties	56
2.10	The Significance of Teaching Writing to EFL Students in Jordan	57
2.11	Writing Theories	59
2.12	Cognitive Processing Theory	60
2.13	Writing Models	64
2.13.1	Flower and Hayes's Model.....	67
2.13.2	White and Arndt's Model (1991)	75
2.13.3	Bereiter and Scardamalia's Model (1987).....	77
2.14	Basic Elements of Writing	78
2.14.1	The Affective Aspect.....	79
2.14.2	The Cognitive Aspect	79

2.14.3	Working Memory of the Writer.....	79
2.14.4	Long-term Memory of the Writer.....	79
2.15	Variables of the Study	80
2.15.1	Working Memory Capacity	81
2.15.2	Writing Strategies	84
2.15.3	Writing Ability	88
2.16	The Connection between Writing Process and Writing Strategies	90
2.17	Review of Related Literature	92
2.18	The Theoretical Framework of the Study	101
2.19	Chapter Summary.....	103

CHAPTER THREE - METHODOLOGY

3.1	Introduction	104
3.2	Research Design.....	105
3.3	Research Methods and Procedures	107
3.4	Research Population and Sample	108
3.4.1	The Study Sample Selection.....	109
3.5	Research Instruments	113
3.5.1	EFL Expository Essay Writing.....	114
3.5.2	Post-writing Strategies Questionnaire	116
3.5.2(a)	Descriptive Statistics of Post-writing Questionnaire....	117
3.5.2(b)	Reliability and Validity Estimates of Writing Strategies Questionnaire	118
3.5.2(c)	Validity Estimates of Writing Strategies Questionnaire.....	119
3.5.3	Working Memory Span Test	120
3.5.3(a)	Descriptive Statistics of Operation Span Tasks.....	121

3.5.3(b)	Descriptive Statistics of Operation Span Tasks (Recall Words).....	124
3.5.3(c)	Reliability of Operation Span Tasks.....	124
3.5.4	EFL Writing Performance through Accuracy and Complexity.....	125
3.6	Data Collection Procedures.....	125
3.7	Pilot Study.....	127
3.7.1	Sample of the Pilot Study	128
3.7.2	Procedures for Administering Research Instruments in the Pilot Study	129
3.7.3	Feedback of the Pilot Study.....	130
3.7.4	Quantitative Results of the Pilot Study.....	130
3.8	Data Analysis	131
3.8.1	Writing Ability	131
3.8.2	Working Memory Capacity	132
3.8.3	Use of Writing Strategies	132
3.9	Quantitative and Qualitative Data Analysis Techniques	133
3.10	The Interview Guide	134
3.10.1	Question guide for students	134
3.10.2	Question guide for teachers	135
3.11	Thematic Analysis.....	136
3.12	Chapter Summary.....	137

CHAPTER FOUR - DATA ANALYSIS AND DISCUSSION

4.1	Introduction	138
4.2	The Research Questions Answers	138
4.2.1	What is the relationship between Jordanian EFL learners working memory capacity and their writing performance?.....	139
4.2.2	What is the relationship between Jordanian EFL learners writing ability and their writing performance?	140

4.2.3	What is the relationship between Jordanian EFL learners' use of writing strategies and their writing performance?	141
4.2.4	What are the effects of independent variables (working memory capacity, writing ability and use of writing strategies) on writing performance among Jordanian EFL learners?	144
4.2.5	Summary of Results for First, Second, and Third Research Questions	148
4.3	Data Analysis of EFL Students and Lecturers' Interviews	149
4.3.1	Data Analysis of Interviews	152
4.3.2	Jordanian EFL Lecturers' Interviews	153
4.3.3	Jordanian EFL Students' Interviews.....	157
4.4	Chapter Summary.....	162

CHAPTER FIVE - DISCUSSION AND CONCLUSIONS

5.1	Introduction	163
5.2	Overview of the Study	164
5.3	Summary of Discussion and Conclusions of the Study.	165
5.4	Pedagogical Implications for English as Foreign Language Learners	172
5.5	Recommendations for Future Studies	174
5.5.1	Recommendations for Practitioners	176
5.6	Chapter Summary.....	179

REFERENCES.....	180
------------------------	------------

APPENDICES

LIST OF TABLES

		Page
Table 3.1	Dependent and Independent Variables of the Study	106
Table 3.2	Research Methods and Procedures	107
Table 3.3	Sample of the Main Study	109
Table 3.4	Profile of Jordanian EFL Lecturers at Mu'tah University	109
Table 3.5	Research Methods and Instruments	114
Table 3.6	Descriptive Statistics of Post-writing Questionnaire	117
Table 3.7	Cronbach's Alpha Thresholds	118
Table 3.8	Reliability Estimates of Writing Strategies Questionnaire	119
Table 3.9	Heterotrait-monotrait Ratio of Correlations (HTMT) Scores for Writing Strategies Tool	120
Table 3.10	Item Response Theory Analysis of Operation Span Task	122
Table 3.11	Descriptive Statistics of Equation Questions	123
Table 3.12	Descriptive Statistics of Recall Word Task	124
Table 3.13	Reliability of Operation Span Task	124
Table 3.14	Sample of the Pilot Study	129
Table 3.15	Structure of Writing Strategies Questionnaire	133
Table 3.16	Variables and Corresponding Observations	133
Table 4.1	Correlations Coefficients between Working Memory Capacity and Writing Performance Subdomains	139
Table 4.2	Correlations Coefficients between Working Memory Capacity and Writing Performance Subdomains	140
Table 4.3	Correlations Coefficients between Writing Strategies and Writing Performance Subdomains	143
Table 4.4	Complexity Model Summary	144
Table 4.5	Complexity ANOVA Results	144

Table 4.6	Complexity Coefficients	145
Table 4.7	Accuracy Model Summary	146
Table 4.8	Accuracy ANOVA	146
Table 4.9	Accuracy Coefficients	146
Table 4.10	Model Summary Predicting Complexity	147
Table 4.11	ANOVA Summary Predicting Complexity	147
Table 4.12	Coefficients Summary Predicting Complexity	147
Table 4.13	Summary of Results of Correlation Analysis	148
Table 4.14	University EFL Lecturers' Profile	151

LIST OF FIGURES

		Page
Figure 1.1	The Map of Jordan	9
Figure 1.2	The scope of the variable of the study	16
Figure 2.1	Cognition and Affect in Writing	60
Figure 2.2	Cognitive Process Model of the Composing Process	75
Figure 2.3	Theoretical Framework of the Study	101
Figure 3.1	Information Characteristics Curves for Operation Span Tasks Items	122

LIST OF ABBREVIATIONS

ADHD	Attention Deficit Hyperactivity Disorder
EFL	English as a Foreign Language
ELLS	English Language and Literature Students
ESL	English as a Second Language
FL	Foreign Language
LD	Learning Disorder
L1	First Language
L2	Second Language
SILL	Strategy Inventory for Language Learning
WMC	Working Memory Capacity

**KESAN FAKTOR KOGNITIF KE ATAS PRESTASI PENULISAN DALAM
KALANGAN PELAJAR BAHASA INGGERIS DAN KESUSASTERAAAN DI
UNIVERSITI AWAM JORDAN**

ABSTRAK

Komponen penulisan adalah penting untuk berjaya dalam bidang akademik. Pelajar menghadapi pelbagai cabaran untuk belajar cara menulis dalam bahasa asing. Dalam penyelidikan ini, penyelidik mengkaji kesan faktor kognitif terhadap prestasi menulis pelajar EFL. Responden ialah pelajar ijazah sarjana muda Jordan di Jabatan Bahasa Inggeris dan Kesusasteraan di Mu'tah University di Jordan. Kajian ini menggunakan pendekatan kaedah campuran. Data dikumpulkan melalui kaedah kualitatif dan kuantitatif dengan prosedur pensampelan bertujuan. Tiga instrumen penyelidikan digunakan untuk menjawab soalan penyelidikan. Instrumen tersebut ialah: menulis esei EFL, menulis soal selidik strategi, tugas tempoh ingatan bekerja, dan temu bual separa berstruktur. Penyelidik telah mengambil dan menyesuaikan konsep dua perspektif teori unggul yang dicadangkan oleh para cendekiawan dalam pengajaran penulisan bahasa Inggeris sebagai bahasa asing. Sebahagian besar model penulisan oleh Hayes dan Flower (1980/1996) telah dijadikan sebagai asas teori dalam kerangka teori kajian. Hasil kajian menyimpulkan bahawa kebanyakan pemboleh ubah yang dikaji, iaitu, keupayaan ingatan bekerja, kemampuan menulis, dan penggunaan strategi penulisan menunjukkan hasil yang signifikan. Walau bagaimanapun, hubungan antara karangan sebagai suatu strategi penulisan dengan prestasi penulisan pelajar adalah tidak signifikan. Hubungan antara kerumitan dan perancangan, dengan ketepatan dan kesulitan menulis sebaliknya adalah tidak signifikan. Cadangan diutarakan untuk penulis bahan EFL dan penulis

buku teks agar menerapkan kesan faktor kognitif ke atas prestasi penulisan dalam pengajaran penulisan konteks EFL. Kajian masa hadapan boleh memfokus kepada guru yang mengajar penulisan dan pelajar yang mengikuti kursus penulisan. Korelasi di antara faktor kognitif yang mempengaruhi penulisan secara kohesif mempunyai banyak implikasi dalam penyelidikan.

**THE EFFECT OF COGNITIVE FACTORS ON WRITING PERFORMANCE
AMONG ENGLISH LANGUAGE AND LITERATURE STUDENTS AT A
PUBLIC UNIVERSITY IN JORDAN**

ABSTRACT

Writing is vital to success in academic fields. Students face many challenges learning how to write in a foreign language. The effect of cognitive factors on EFL university students' writing performance is investigated in this study. The respondents are Jordanian bachelor's degree students at the Department of English Language and Literature at Mu'tah University in Jordan. The study used a mixed-method approach. Data was collected through qualitative and quantitative methods with a purposive sampling procedure. Four research instruments were used to answer the research questions. They are: EFL essay writing, writing strategies questionnaire, working memory span task, and semi-structured interviews. The researcher has adopted and adapted the concepts of two distinguished theoretical perspectives that are proposed by scholars in teaching writing in English as a foreign language. Hayes and Flower's (1980/1996) writing model was mainly used as the theoretical basis in the theoretical framework of the study. The findings of the study concluded that most of the investigated variables, i.e., working memory capacity, writing ability, and the use of writing strategies showed significant results. However, the relationship between composing as a writing strategy and students' writing performance is not significant. The relationship between complexity and planning on one hand, and accuracy and writing difficulties on the other hand is not significant. Recommendations were presented to EFL material writers and textbook designers to include the effect of cognitive factors on writing performance in teaching writing in an EFL context. Further research can be directed to writing teachers and learners.

Correlations between cognitive factors that influence writing cohesively offer many implications in research.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

The writing skill is a basic language component, which involves a perplexing cognitive activity in comparison to other language skills like listening, speaking and reading (Weigle, 2005 ; Diamond, 2013). To produce a piece of well-organized writing requires learners to cope with many demands and constraints to become successful writers. Writing as a cognitive process is very demanding and complicated. Scholars such as Weigle (2005) and Li (2009) posit that learners consider writing as a difficult task due to external and internal constraints that are related to the writer's proficiency. The writing skill is the most complicated skill, which is not easy to be mastered by students (Bailey, 2003). Students find it easier to write in their native language, compared to producing a piece of writing in a foreign language. This can be attributed to the fact that students think in their own language when they transfer foreign concepts and ideas. Chow (2007) , Al-Sawalha and Chow (2012) maintained that students find it difficult to produce a good piece of academic writing, because of their poor performance in English as a Foreign Language (EFL).

During the past few decades, research on writing in a foreign language has developed considerably. However, related studies have mainly focused on writing from social, cultural or pedagogical perspectives (Schoonen, 2009). Research on writing as a cognitive process and the factors affecting the development of EFL writing, however, has been generally neglected (Schoonen, 2009). This study

attempts to explore further on cognitive factors that have an impact on students' writing performance.

Therefore, to enhance the learners' writing performance, many phases of growth and expansion have been developed in addition to the writing strategies (Reimer, 2001; Fatemi , 2008). Writing strategies do not consider how a written text is produced or even how a learner performs when he/she creates a piece of writing. Hence, many scholars and linguists have criticized the focus of these writing strategies on the grammatical aspect of the language, the use of conventional methods or sentence structure during the writing process. Scholars such as Zamel (1998) and Foo (2007) assert that writing is a helpful skill. This is because during the writing process, the students utilise other skills; mainly the analysis, synthesis, evaluation, and inferring skills. By doing so, the students can enhance their cognitive skills.

Proponents of writing (Sasaki & Hirose, 1996; Yun, 2005; Schoonen, 2009, Hyland, 2012) clarified that EFL learners can improve their writing performance based on their ability to generate sentences in their native language and translate them into a foreign language. In this vein, Abu Samak (2006) pointed out that EFL instructors should focus on the writer's performance and emphasized the role of cognitive factors in developing the student's writing proficiency because cognitive factors play a key role in enhancing writing proficiency. Scholars such as Johnson (2006) and Van Dijk (2007) indicated that teaching and learning EFL writing should shift from the focus on the sentence structure level and the mastery of grammatical and mechanical aspects to the importance of the learners' cognitive factors. In other words, both EFL instructors and learners should not judge the written text as a mere

sequence of sentences and structures that are arranged together (Klebanov& Shamir, 2006). Rather, the instructors should direct more attention to integrating the learner's cognitive factors to enhance writing performance.

Relevant studies on writing examined and explained how writing can be developed in terms of the writers' performance and cognitive abilities (Li, 2009; Hasan & Akhand, 2010). This study, however, examined the writing skill in a Jordanian context, where by the Jordanian EFL learners at university level generally encounter difficulties in producing a good piece of writing. Studies among Jordanian students show that the students cannot generate well-connected sentences based on their cognitive ability (kutkut, 2011) and (Huwari&Hashima, 2011). Through his study Kutkut (2011) assert that the cognitive ability of EFL learners is the most crucial factor that learners encounter in an EFL Jordanian context when they produce a piece of writing because it is somewhat ignored or overlooked by EFL instructors in the classroom. moreover, teachers and instructors are said to have resort to utilising the traditional method. In this vein, Khuwaileh (2006) emphasized that traditional teaching writing methodologies in the Jordanian EFL context have many shortcomings. Therefore, materials for instruction, which draw upon cognitive capabilities of EFL learners, are highly recommended (Kutkut, 2011). The need for such cognitive based materials functions as "instructional designers, whose role is to analyze, solve performance problems and implement solutions that make learners more productive and knowledgeable, this cognitive capabilities would also help students to systematically draft and organise their writing tasks thus when students learn to write grammatically correct sentences with appropriate vocabulary, they would improve their writing ability (Hillocks, 2005).

According to Hsiao and Oxford (2002), good writing in a language needs various strategies and abilities to compose a well-balanced piece of written work. In addition, in any writing, the writer attempts to convey ideas and/or messages to the readers. Therefore, the most important aspect of writing should include the ideas or messages to be conveyed to the target audience (Flower, 1993). To facilitate the transfer of ideas sufficiently, the content, as well as the organization of the essay must be given attention and focus (Kaplan & Baldauf, 2005).

In relation to the process involved in writing, Petric and Czár (2003) mentioned that there are three stages. They are the pre-writing stage, the while-writing stage and the post-writing stage. These three stages are interconnected as they are non-linear in that they may overlap and may occur repeatedly without any fixed sequence or order (Manchón & Roca de Larios, 2007). Hence, L2 students need to use various techniques and strategies as required at each stage of the writing process (Cohen, 1998; reamer, 2001; silva, 2004). In this respect, Petric and Czár (2003) considered the writing process as a process of actions intentionally carried out by writers using their own strategies to produce good writing. Moreover, the writing process develops the students' cognitive skills in acquiring the necessary writing strategies such as analysis, synthesis and inference in the learning process (Bacha, 2002; Al-Khuwaileh & Al-Shoumali, 2000).

To conclude, the effect of cognitive factors on the performance of EFL writers is an area of interest for most writing researchers. Moreover, research in EFL writing emphasizes the importance of the relevant cognitive factors, which contribute to the development of EFL writers' performance. The cognitive factors include the cognitive ability, the EFL writing ability, the working memory capacity as well as

the writing strategies. The working memory capacity factor and the writing ability factor are areas that have not been thoroughly investigated from EFL writing perspective in Jordan the studies carried out among Jordanian students have generally focused on difficulties in writing skill (Huwari&Hashima, 2011) also students are weak in their writing skills Al-Sawalha and Chow (2012). Therefore, this study aims to examine the effect of cognitive factors on Jordanian students' writing performance and the writers' ability at the university level in a Jordanian context, where English is the medium of instruction in most academic institutions. Furthermore, there is little variation in English language writing context in Jordan, as well as in the use of new approaches in teaching writing to EFL students (Al-Khasawneh, 2013). Jordanian teachers often look at the written piece as it is the final product checking and reviewing their students' writings word by word and correcting every single error they observe in writing. This is time-consuming and labor intensive and the teachers' efforts in correcting the students' errors are not taken seriously by students, because students repeat their previous mistakes (Khuwaileh, 2006).

1.2 Background of the Study

As discussed in the literature earlier research on EFL writing has generally focused on the social, cultural or pedagogical aspects of writing. Writing in EFL is a complex cognitive activity. Research on writing from a cognitive perspective has recently flourished (Schoonen et al., 2009). This study investigates the effect of cognitive factors on the writing performance of English Language and Literature Students (ELLS) at a public university in Jordan (Mu'tah University). Three

cognitive factors, affect EFL learners' performance in writing. These are 1) writing ability, 2) use of writing strategies, and 3) working memory capacity, which represent the independent variables (IV) and students' writing performance, which represents the dependent variable (DV) of the study. In previous process-oriented studies, it was found that the writing process is more closely related to learners' writing strategies (Krapels, 1990; Torrance & Galbraith, 2006). However, studies on the writing process and writing strategies employed qualitative methods like think-aloud or stimulated recall for data elicitation. These studies investigated limited numbers of participants and, therefore, the obtained results were hardly generalizable. The use of a questionnaire, as a research instrument, to measure writing strategies reaches a larger number of participants (Leki, 1995; Richards & Renandya, 2002).

The writing ability factor is the most frequently investigated variable. Writing ability is an important skill to learn how to write in English as a second/foreign language. It is essential for students majoring in English. However, not all students have the same L2 writing ability despite the same academic courses at university (Saadata & Dastgerdib, 2014). The third factor, which is the working memory capacity, refers to the storage and processing mechanism for complex cognitive activities such as reading and writing. The working memory factor was first proposed by Baddeley and Hitch (1974). It involves the temporary storage and manipulation of information that is assumed to be necessary for a wide range of complex cognitive activities (Baddeley, 2003). According to Hayes (1996), working memory has a key role in text generation and occupies the central position in his model of writing. Working memory serves as a maintaining and processing interface of different kinds of knowledge involved in the writing process.

Given the complexity of processes and knowledge that the writer needs to coordinate, it is evident that writing makes considerable demands on the writer's cognitive skills. More specifically, skilled writing heavily relies on executive functions (EF). Broadly, EF is an umbrella term for a set of cognitive functions that control and regulate purposeful and goal-directed behavior. From a neuropsychological perspective, EF activate prefrontal areas of the brain. In the neuropsychological literature, three core EF have been distinguished (Diamond, 2013; Miyake, Friedman, Emerson, Witzki, & Howerter, 2000): they are inhibition of pre-potent responses, information updating and monitoring, and mental set shifting. These low-level core EF support high-level EF, self-regulative behaviors or cognitions such as reasoning, problem-solving, and planning (Diamond, 2013).

Likewise the writing process refers to the set of strategies that the writer uses to implement the different processes. It is precisely through this complex writing process that the written product, i.e. a text written down, emerges. The cognitive and linguistic skills, along with the transcription skills, refer to the foundational skills as they appear in Berninger and Winn's (2006) model. The framework builds on the assumption that these skills are both directly and indirectly related to the written product through their influence on the writing process, and that WM is the cognitive system within which these relationships are established.

1.3 The History of Education in Jordan

This section provides a discussion on the history of the educational system in Jordan to highlight the objectives of this study. Jordan is in the heart of the Arab

World. It is geographically and politically one of the most important countries that contributes to world peace because of its international efforts and location. It occupies an approximate area of 97,940 km with a total of 7 million. It was under the British rule from 1917 till its independence in 1946. During that time, the Hashemite Kingdom of Jordan was known as Trans-Jordan or 'Emirate of Eastern Jordan'. Jordan is a newly-founded Arab state that experienced many political dilemmas due to its crucial position in the region. It is a Muslim state under the Ottoman, Umayyad and Abbasid succession (Younis, 2002).

The population of Jordan is shaped by distinctive forms of culture that varies in terms of their style of life. Jordan has the highest number of educated people in the Arab World particularly in the Middle East region. People in Jordan depend on a variety of professions including trade, handicrafts, agriculture, industry and other relevant minor professions to earn their living. Due to globalization, Jordan has largely expanded and developed economically. Amman is the political capital city of Jordan. It is one of the highest populated cities in Jordan compared to other cities such as Zarqa and Irbid to the east and north of Amman (The National Centre for Human Resources Development, 2010). As indicated in Figure 1.1, the map of Jordan portrays the major Jordanian towns and the bordering states to Jordan.

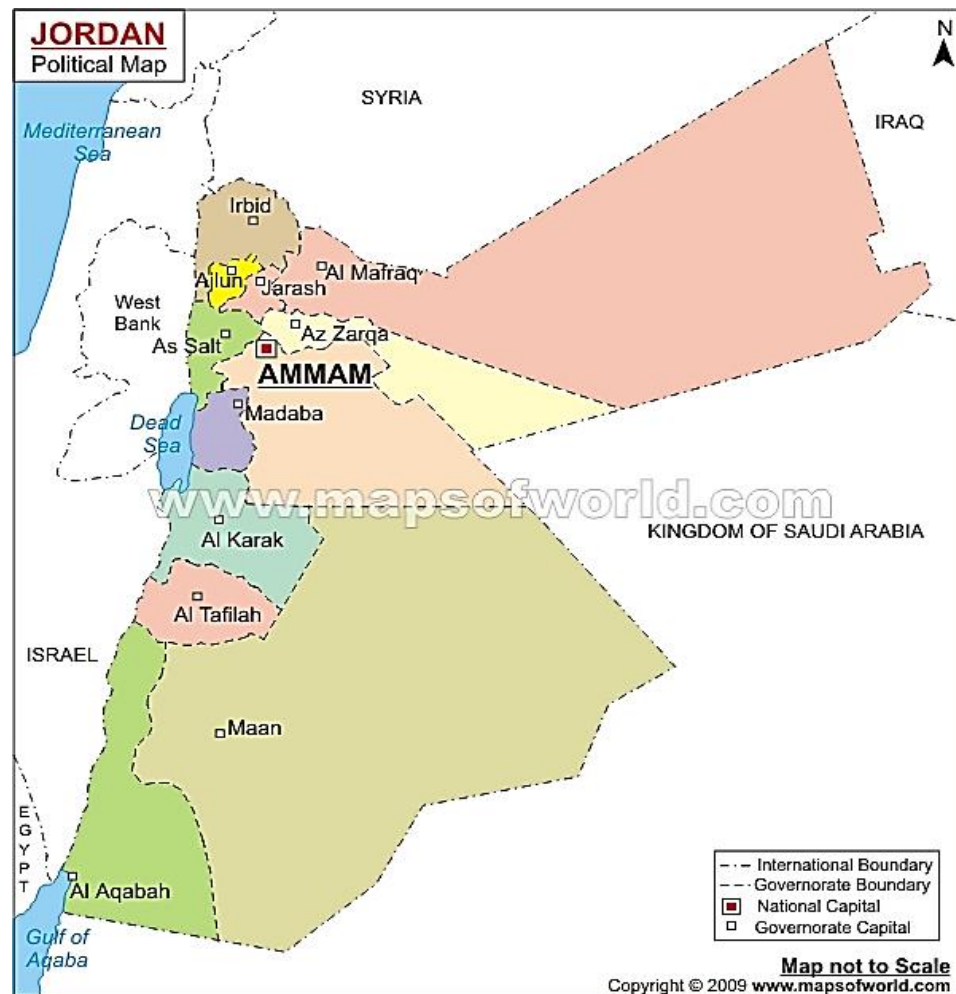


Figure 1.1. The Map of Jordan

Source: The National Centre for Human Resources Development (2010)

An obvious growth in the number of academic institutions in both the private and public sectors have been observed lately in terms of the newly founded schools, colleges and universities. Despite the relatively small size of the country, Jordan has experienced massive educational and academic growth recording the highest number of academic institutions in the Arab world due to the steady increase in the number and enrolment of both local and international students who migrated from foreign and neighbouring countries to Jordan (The Ministry of Higher Education & Scientific Research, 2010). Consequently, this led to an increasing need for professional and expert instructors and highly-educated people, which resulted in the establishment of

both private and public academic institutions to cope with the demands of the General Certificate of Secondary Education (Tawjihi) graduates and higher education seekers. In this regard, the Ministry of Education in Jordan provides high quality education making it a suitable destination for pursuing tertiary level education and maintaining political stability and high security levels (Higher Education Ministry, 2010). The Council of Higher Education in Jordan was founded under the Law (No. 3).

1.3.1 The System of Higher Education in the Hashemite Kingdom of Jordan

The system of Higher Education in Jordan started to grow during early twentieth century when different academic institutions were established in different parts throughout the country. The establishment of these institutions provided the country with the required educational demands and professional teaching staff to meet the demands of both the local and international markets (Zughoul, 2001). The first academic institution to be established was Jordan University in 1962 and Yarmouk University in 1976 as the first two public universities in Jordan. This led to the establishment of other private and public institutions. In this regard, Amman Ahliya University was the first private university to be established in Jordan in 1999. It was approved by the Ministry of Education in Jordan. Due to the global development and expansion, many other private and public universities were also founded. A total of 25 universities in different parts of Jordan have been established so far (The Ministry of Higher Education & Scientific Research, 2010). Education in Jordan is provided at all educational levels such as schools, colleges and universities so that Jordanians are equipped with the required demands to obtain decent and

respectable level of education through professional and training programmes. In 2001, the Scientific Research Ministry was established to enhance the development of both the private and public education sectors.

1.3.2 The Status of English as EFL in Jordan

English is a universal language. It is used in Jordan as a foreign language. It is used and taught at all the educational and academic levels including schools, colleges and universities. EFL learners encounter many problems in the process of learning the English language. These problems may be attributed to various social, educational and economic factors which include the teaching curriculum or methods, status, the personal income, and other relevant cultural factors (Zughoul& Abdul Fattah, 2003). Also, the Scientific Research Ministry pointed out the goals of using English language within the field of teaching at tertiary level education. The major goal of using the English language in the academic institutions in Jordan is to help language learners develop their communication skills to contact the outside world (Al-Wreikat, 2009). The accountability of achieving the objectives of EFL learning and teaching in Jordan is shouldered by the Education Council at the Ministry of Education, which designs the EFL curriculum so that students learn the four language skills. The curricula of teaching English language in Jordan possess a number of objectives as follows:

- 1) EFL learners should be able to express factual information, mood, attitude, emotions, and to plan and organize information in expository language both speaking and writing.

- 2) EFL learners should be able to express feelings and interconnect with other cultures, and possess the ability of shouldering responsibility of teaching EFL.
- 3) EFL learners in Jordan should be able to communicate verbally transactional skills such as initiating, maintaining and terminating speech (the Higher Education Council in Jordan, 2010).

In conclusion, learning English language either in its spoken or written forms, is the main goal of all the public and private academic institutions in Jordan due to the position of English in the Jordanian schools, colleges and universities as a medium of instruction. Acquiring and learning English as foreign language is required for conducting all the varied types of communication including describing materials, producing written work and attributed objectives (The Higher Education Council, 2010). As a result, writing skill has been developed to be a crucial component in the design of EFL curricula in Jordan. The Ministry of Education and Higher Education of Jordan take all the necessary measures to meet the demands of the current fluctuating development since English has become the most universal language that is highly connected with international trade and relations.

1.4 Statement of the Problem

The written proficiency of EFL students remains a challenge despite various education programs introduced to them. It is identified that Jordanian students of English Language and Literature encounter different problems in writing (Toubat, 2003). According to Al Khateeb (2004), English Language learners in varied

Jordanian academic institutions undergo many writing programs, but they still encounter many difficulties when they try to produce a written essay. Among other challenges, Al-Khateeb (2004) argued that a considerable number of these students write isolated and disconnected sentences and phrases. They are unable to write words, phrases and sentences in a connected manner to create a well-organized written text. The English language has been used as a medium of instruction in different academic contexts in Jordan for a long time, where learners are anticipated to fulfil all the requirements of language learning (Al-Khateeb, 2004). However, a lot of higher education students in Jordan have problems when they try to create a piece of writing (Al-Omari, 2004).

Studies for students are also reported to have problems in attempting to learn writing in English as a foreign language environment encounter many challenges that relate to sentence construction, vocabulary selection, organization of ideas and making a connection between form and content in an appropriate way (Abusamak, 2006). The studies also pointed out that learners encounter challenges in generating a productive piece of writing in different educational contexts. He also mentioned that because of the break down in communicative writing between students' needs and instructors' teaching techniques, EFL instructors of writing are uncertain on how to help their students develop their writing skill and write effectively, as well as produce meaningful writing. As a result, the emergent need for making students write effectively is becoming greater. EFL students need to be more familiarized with a real and authentic writing situation. Many of the students have difficulty performing well when they write in EFL (Al-Natsheh, 2007), and one of the major problems is their poor writing performance. In order to produce a meaningful piece of writing for the readers, a piece of written work should be organized, meaningful,

and unified so that it can achieve purposeful and functional communication process (Abdellatif, 2007).

Huwari and Hashima (2011) indicated that EFL students in Jordan who have already completed several years of studying writing courses at the university level still encounter difficulties in the writing skill. They lack the ability to perform and write well in EFL particularly at the university level in a Jordanian context. This is because they have weak performance and they lack the cognitive capacity to write.

Similarly, Al-Sobh and Al-Haq (2012) pointed out that EFL students in Jordan are weak in their writing skills and they need to enhance their writing performance. They are required to produce well-organized ideas, arrange sentences in a logical way, as well as connect written structures coherently. The cognitive ability plays a professional role in this is because an activity such as writing requires students to think actively and should be prepared mentally. It also requires them to combine and arrange sentences to produce meaningful ideas.

Al-Sawalha and Chow (2012) corresponded to some of these studies and stated that most of the studies conducted in a Jordanian EFL context affirmed that Jordanian university students are weak in their writing skill and encounter difficulties when they write. These studies recommended further research to explain the sources and causes behind the students' weak writing performance. Such previous studies attempted to find out ways in which EFL students can improve their writing ability and performance as well, particularly at the university level in a Jordanian context. This is attributed to many cognitive factors and concepts that need to be considered and understood in EFL context.

One study that focused on cognitive knowledge, as recorded by Al Khasawneh and Huwari (2013). The study posits that cognitive knowledge and understanding are some of the causes behind students' weakness in writing skills. Likewise, Al Odwan and Ibnain (2014) pointed out that there is an impact by using the process approach to writing on the progress of higher education students' writing product skills given the various cognitive problems faced by the students writing remains a challenge to the Jordanian students. According to Rababah and BaniMelhem (2015), EFL students in Jordan encounter difficulty in creating a piece of writing due the inadequate vocabulary, lack of unity and coherence, lack of encouragement, lack of positive feedback and lack of motivation.

Based on the previous studies, it is evident that cognitive factors in writing performance are significantly important to be investigated among university students in the Jordanian context. This study therefore investigates the cognitive factors, which have an impact on Jordanian EFL learners' writing performance and focuses on the cognitive factors: writing ability, working memory capacity, and use of writing strategies. The present study provided new insights to help students improve their writing performance in an attempt to overcome the problem of Jordanian ELLS poor writing performance of ELLS at university level. Generally, the scope of the study entails the variable that are illustrated in the diagram below.

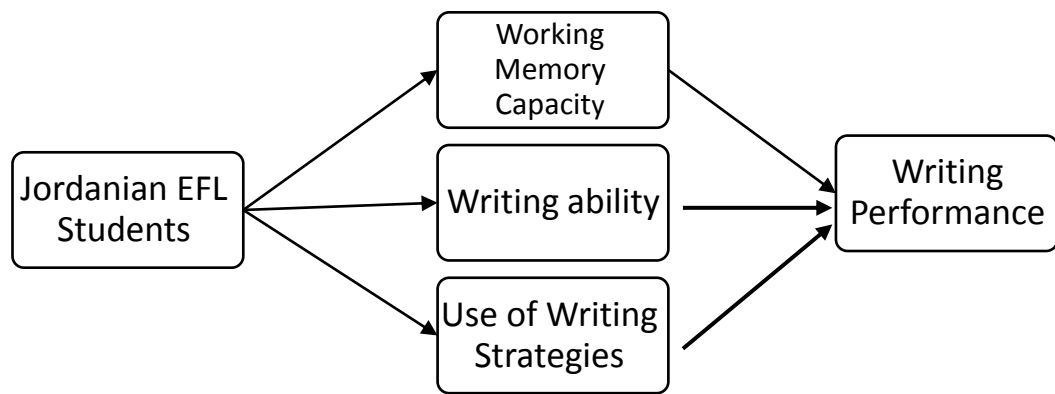


Figure 1.2. The scope of the variable of the study

1.5 Research Objectives

This study mainly aims to elicit data related to the effect of cognitive factors on Jordanian English language and literature students' writing performance.

- i. To investigate the relationship between Jordanian EFL learners' working memory capacity on their writing performance.
- ii. To examine the relationship between Jordanian EFL learners' writing ability and their writing performance.
- iii. To explore the relationship between Jordanian EFL learners' use of writing strategies and their writing performance.
- iv. To study the effects of independent variables (working memory capacity, writing ability and use of writing strategies) on writing performance among Jordanian EFL learners .

1.6 Research Questions

The present study aims at addressing the following research questions:

- i. What is the relationship between Jordanian EFL learners working memory capacity and their writing performance?
- ii. What is the relationship between Jordanian EFL learners writing ability and their writing performance?
- iii. What is the relationship between Jordanian EFL learners use of writing strategies and their writing performance?
- iv. What are the effects of independent variables (working memory capacity, writing ability and use of writing strategies) on writing performance among Jordanian EFL learners?

1.7 Significance of the Study

This study is significant due to its relevance and contribution to understand different cognitive factors, which are related to the writing performance of Jordanian ELLS at tertiary educational level from a cognitive perspective. The understanding of cognitive factors in writing will enable students to utilize their cognitive abilities to enhance their writing performance. The integration of these factors in this study also offers a clear understanding, as well as valuable insights into how EFL proficiency in writing can be further enhanced. By examining the cognitive factors, this study is considered significant to develop an appropriate EFL writing intervention for curriculum planners of EFL studies in the Jordanian context. This study is important, because it provides English language and literature students with

good knowledge to enhance their understanding about the importance of the cognitive factors in enhancing their writing performance. Such insights are very essential for both students and teachers in English language teaching context so that they can be facilitated with knowledge of the impact of the cognitive factors of EFL writing on students' writing performance. The university instructors will also be able to design their writing courses curricula and plan their lessons accordingly given the knowledge of the impact of cognitive factors on writing.

Furthermore, the study contributes to providing suggestions on the kind of EFL writing materials and strategies that are supposed to be used in classroom teaching. This study will also offer a number of recommendations to syllabus designers to include components that emphasize on English language writing performance and strategies, specifically those related to EFL writing practices. In this regard, the findings and results of this study can significantly contribute to existing literature on cognitive factors and writing performance as well as EFL strategies in context. Therefore, this study investigates the effect of different cognitive factors including EFL writing ability, the understanding of working memory and the varied strategies available for writing, that is, how these cognitive factors are related to the writing performance of Jordanian university students specifically. This research will assist EFL instructors and learners to overcome writing performance difficulties in expository writing at tertiary level education in Jordan. It can also assist instructors and learners of EFL writing to investigate writing performance difficulties through the effect of cognitive factors in an extended manner in a Jordanian university context. It is proposed that the overall writing performance of EFL learners is multidimensional in nature. Therefore, it is important to study the effect of the cognitive factors on EFL to enhance EFL learners' writing performance.

In conclusion, this study is significant because it focuses on the contribution of cognitive factors, whereby previous studies focused mainly on the social factors and their effect on the development of writing process among EFL Jordanian students. This research attempts, therefore, to fill the existing gap in the literature on writing. This study contributes not only to EFL writing context, but also to the whole body of knowledge for enhancing the English language proficiency enhancement among Jordanian students.

1.8 Scope and Limitations of the Study

The scope of this study is basically limited to the cognitive factors, which affect Jordanian ELLS writing performance. The investigated cognitive factors include writing ability, the use of writing strategies, and working memory capacity. The study is focused on the fourth year ELLS at Mu'tah University, Jordan. The findings of the study may, therefore, be applicable and generalized to most of the Jordanian student population of similar background or context. The obtained findings of the study are limited to the cognitive factors. However, they can be used as a basis to conduct similar research in a different context, or sample population using different variables.

1.9 Definitions of Key Terms

Cognitive Factors: Cognitive factors are related to thinking or conscious mental processes (Hayes, 1996 & Kellogg, 2008) in addition to understanding, acquisition,

formation of beliefs, and attitudes towards something. The cognitive factors, which represent the independent variables of this study, include writing ability, the use of writing strategies, and working memory capacity.

Writing Performance: It is defined as a person's achievement in writing to communicate thoughts and make others understand his/her expressions (Weigle, 2002). Writing performance is also defined as the process of communicating ideas in an appropriate manner (El-Koumy & Mirjan, 2008).

Accuracy: The accuracy aspect is the grammatical and lexical accurateness, as well as EFL learners' effort to avoid errors, which are reflected through accuracy (Ellis, 2005: 15; Foster & Skehan, 1996; Ortega, 2003; Skehan, 1998). In the context of this study, accuracy is an instrument, which is used to measure writing performance.

Complexity: The complexity aspect includes the use of more elegant language, in other words, the ability to restructure language (Ellis, 2005: 15; Foster & Skehan, 1996; Ortega, 2003; Skehan, 1998). In this context of this study, complexity is an instrument, which is used to measure writing performance.

Writing Ability: It is defined as the skill to express ideas, thoughts, and feelings to other people in written symbols to make readers understand the ideas conveyed (Al-Khuwaileh & Shoumali, 2000). Johns (1990) added that writing ability is the skill that is generally used to express oneself freely.

Working Memory Capacity (WMC): It is defined as the system of encoding, maintaining and retrieving of information, goals and strategies that are necessary to perform a certain task. It is a part of short-term memory and when practiced, it is stored into the long-term memory. It is the human's cognitive system, which stores

and processes data during complicated cognitive tasks (Baddeley & Hitch, 1974; Daneman & Carpenter, 1980, 1983; Harrington & Sawyer, 1992; Shah & Miyake, 1996). This system includes the storage buffers, practice or re-storage processes, and an administrative concentration (Norman & Shallice, 1986) or a control network (Chein & Schneider, 2005). In the context of this study, working memory capacity is measured by working-memory span task.

English as a Foreign Language (EFL): It refers to the English language, which is taught to students to facilitate their professional development, particularly in non-native, English-speaking countries (Bataineh, 2005).

Writing Strategies :it is defined as conscious decisions made by the writers to solve a writing problem. Writing strategies are classified into rhetorical strategies, metacognitive strategies, cognitive strategies, and social/affective strategies (Riaz, 1997; Wenden, 1991).

1.10 Chapter Summary

This chapter provided discussion on the effect of cognitive factors on EFL writing of students majoring in English language and literature at Mu'tah University in Jordan. It also provided information on the research topic and presented a detailed background to the study. The chapter presented and discussed the problem statement, objectives and research questions of the study. The significance, as well as scope and limitations of the study were also presented and discussed. In depth and ended with the definitions of key terms that underpin the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discusses the review of related literature on studies related to writing performance. The chapter also discusses the concepts on writing in English as a foreign language, writing models, writing strategies, writing processes, and the literature review. The theoretical framework of the cognitive process is also presented in this chapter.

2.2 The Writing Skill

One of the most significant skills in English language learning is writing (Rao , 2007) . It is the way to communicate with others in terms of expressing needs and desires. Writing is not an issue of putting words and papers only, but it is also a matter of being one of the most essential skills that is very perplexed to master in language learning (Jalaluddin , 2011). Writing formulates an interaction of putting marks on a specific surface. To be more particular, writing is that linguistic means which is used to convey meaning of spoken words through a set of written signs and symbols that possess semantic value or meaning understood by two parties (speaker and reader). For a writer to master the writing skill, he/she should have the knowledge of language and aware of the structures of that particular language. It also requires the writer to possess a high level of knowledge in terms of the organization of ideas and thoughts through the selection of meaningful chunks and words (Jim,

2010). In general, writing is a linguistic tool that is used by the writer to express ideas within a specific culture. In order to be a good writer, you should have mastery over four basic skills. This includes grammar, style, mechanical skills and the evaluation skill (Heaton, 1975).

Writing is primarily considered as an essential, active and productive language skill. It is vital to success in academic fields. Students learn how to write in a foreign language (FL) facing many challenges (Erkan & Saban, 2011). Lindemann (2001: 10) defined writing as “a process of communication”. It is unique because it uses a certain system that is graphic to convey verbal messages. The process of writing involves complicated, as well as creative cognitive processes (Silvia & Matsuda, 2001).

Writing is complex. Addressing different types of readers, we write in different ways. In other words, we write about certain topics addressing particular readers, with a specific goal in our minds, using an appropriate language. Alsamadani (2010) indicated that EFL/ESL writing is quite difficult, complex and challenging process. Langan (2005) also emphasized that writing consists of different stages and sub-processes including discovering and developing a thesis, organizing, revising, and editing. The product should be effective and error-free piece of writing. In the same vein, Lee (2003) stressed that the majority of business and technical writing in the world is done in a second language. ESL/EFL writing is considered as one of the most important aspects of language teaching as well. Therefore, good ESL/EFL writing is a key concern for teachers, researchers, textbook writers and program designers in the domain of Foreign Language Teaching.

Writing integrates not only how cognitive processes trigger writing performance, but also trigger activation in the cognitive system (Olive, 2003). Therefore, it is important to understand how these mental processes deal with on-line (re) organization and control L2 processing and production (Kellogg, 1996). Researchers (Abu-Rabia, 2003; Hayes & Grawdol-Nash, 1996; McCutchen, 1996; Olive, 2003) stated that many cognitive processes are engaged in this skill. During the process of writing, writers usually have plenty of time to plan and think before they embark on writing. This implies that their working memory capacity manages several simultaneous processes. Planning, which is central to writing process, includes the writer's ideas in the pre-verbal message when she/he wants to communicate before going on into the real message. In other words, the linguistic knowledge is assessed to transform planning into a verbal message (Olive, 2003).

Such knowledge involves grammatical encoding and the access of the mental lexicon by retrieving syntactic and morphological word categories (Olive, as cited in Bock & Levelt, 1994). Thus, ideas are organized and reorganized by writers, especially if the writing performance as in L2. The writer has to retrieve the necessary lexical and semantic information along with the previous knowledge about the topic from their long-term memory (LTM) in order to perform writing in L2 (Kellogg, 1996, 2001a; Olive, 2003). If good knowledge is available about a certain topic, a lower cognitive effort in writing performance is demanded (Kellogg, 2001a). Therefore, skilled writers require less cognitive efforts to manage resources that activate linguistic (syntactic and semantic) information necessary for writing performance (Kellogg, 2001c). On the other hand, poor writers need more cognitive efforts to produce a certain text on a certain topic (Abu-Rabia, 2003 & McCutchen, 1996).