Using formulaic sequences in improving EFL students' written fluency

By

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Submitted to the graduate degree program in the Department of Curriculum and Teaching and the Graduate Faculty of the University of Kansas in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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Date Approved: May 11, 2020

Abstract

Research in corpus linguistics shows that language is formulaic in nature, and more often than not native English speakers use formulaic sequences to communicate. Given this, research in second language acquisition (SLA) has taken into consideration this observation and extensively studied the role of formulaic sequences in augmenting English language learners' (ELLs) writing proficiency. However, limited empirical studies have tested the role of explicit instruction of formulaic sequences on intermediate ELLs writing proficiency. This experimental study tested a multi-process pedagogical approach to explicit instruction of formulaic sequences on second level university students in Yemen. It compared an approach to the teaching of writing in which formulaic language is given prominence, to a more typical approach to teaching L2 writing in which the teaching of formulaic language is downplayed and/or totally disregarded. Results of the study revealed that students who undertook the treatment demonstrated more use of these formulaic sequences, which was also associated with less grammatical errors and higher level of English proficiency. Additionally, the results revealed that the experimental group did outperform the comparison group in both four-week sessions.

Dedication

To my deceased parents, may Allah shower their souls with his countless blessings and unending

mercy and forgiveness. I hope I have made you proud.

Acknowledgement

In the name of Allah, the most gracious, the most merciful, peace and blessings be upon his Prophet Mohammad, his family, his companions, and all those who follow his righteous path to the Day of Judgement. This dissertation would not have been possible without Allah's divine guidance, grace and direction; to Him I owe everything in my life and to Him I shall return. During the time of pursuing this degree, He granted me and my wife our second son, Hasan, and our two beloved daughters, Mayar and Tasneem. For that and everything else I am and will always be thankful to Allah.

Second to that, I would like to thank my wife, Noor, who has always stood by me through thick and thin and through all my travails, my fits of pique, and my touchiness. She stood by me steadfastly, gave me all the support and help I needed, and took care of the family during my graduate studies. I would like also to thank my oldest son, Hussein, for his support and constant *Dua* (*duʿāʾ*) for my success and for helping his mother with the house chores and taking care of his younger siblings. I would like to mention again my daughter and my princess, Mayar, my son, Hasan, and my youngest daughter and little peanut, Tasneem. You have my unconditional and eternal love. You may not be able to read this as of now, but I would like to state that I am very proud to be your father and it is my great privilege and responsibility.

I would like also to extend my sincere gratitude to my younger brother Adnan who took care of the family back home in Yemen during my graduate studies and relieved me of much stress. You have exceeded my expectations despite your young age and proved to be the man our father had always foreseen you to be. Additionally, I would like to mention my two younger brothers, Ghamdan and Osama. You have grown up significantly in the past seven years while I was away from you. However, not a single day passed without me thinking about you and the

memories you made during this time without me being in them. I missed much of your childhood, but I wish you had a wonderful one. Besides, I wish to express my gratefulness and appreciation to my eight sisters who kept me in their prayers constantly and were the source of joy and love in my life.

I would like thank Dr. Mahmoud Abou-Elfath and Dr. Moussa Elbayoumy for their invaluable support and help in pursuing my degree. May Allah shower them with his blessings and may He grant them Jannah for all they have done for me and many other students – *Jazaka Allaho Khairan!* Likewise, I wish to thank my dearest friends Abduljabbar Alshehri, Mohamad Alfadeel, and Yahya Alshehri for their endless help and support throughout my graduate studies. You guys were the best friends I could have asked for and may Allah reward you with Jannah. Furthermore, I would like to extend my thanks and gratitude to the United States Government represented by the Fulbright Program for funding most of my graduate studies.

I thank all my professors at the University of Kansas who have helped me become who I am today. Among those professors, I would single out my dissertation committee members: Dr. Steven White (my advisor), Dr. Gonzalez-Bueno, Dr. Paul Markham, Dr. Arlene Barry, and Dr. Bruce Frey. Each and every one of you contributed greatly though your insightful feedback and guidance throughout my dissertation. A huge thank-you to my advisor and mentor Dr. White for his continuous support and patience with me. I am eternally grateful! Finally, I would like to thank the Lawrence Islamic Center for all the help and support and making Lawrence a better place for me and my family.

Table of Contents

List of Figures

List of Tables

CHAPTER ONE: Introduction

Statement of the topic area

The literature on second language (L2) research and pedagogy predominantly regards single words as the basic lexical unit of sentences (Hatami, 2015; Schmitt, 2010; Siyanova-Chanturia & Sidtis, 2019), not only because they are effortlessly identified, but also easily taught (Schmitt, 2010). On the other hand, growing research in psycholinguistics has shown that language users do not process the language solely at the word level but extend that to multi-word sequences (Conklin & Schmitt, 2012; Siyanova-Chanturia & Pellicer-Sanchez, 2019). These multi-word sequences or lexical items usually have a single meaning and are often labeled as "formulaic sequences." The term "formulaic sequences" is an umbrella that covers idioms, collocations, phrasal verbs, lexical bundles, lexical phrases, etc. (Schmitt, 2010). It has been proposed that the use of formulaic language in L2 writing indicates fluent as well as natural writing (AlHassan & Wood, 2015; Appel & Wood, 2016; Bestgen, 2017; Boers & Lindstromberg, 2012; Durrant, 2019; Granger & Bestgen, 2014; Hou, Loerts, & Verspoor, 2018; Paquot, 2017).

In the grand scheme of things, writing well is not a skill that is acquired naturally (Myles, 2002). As a matter of fact, in linguistics, neuropsychology, and philosophy of language, a natural form of any language is the one that is processed spontaneously and without intentional or conscious planning (Lyons, 1991); conversely, writing involves extensive planning and thinking. Writing skills can only be refined through diligent practice and continuous learning experiences. Additionally, the act of writing entails composing and that implies the ability to communicate bits of information in the form of a narrative account or description, or to transmute information into original manuscripts, as in argumentative or expository writing (Myles, 2002). Learning

writing is best viewed as a series of activities that range from the mechanical aspects of writing on the one end, to the more multifaceted process of composing on the other end (Hadley & Reiken, 1993). Among these activities, it is the process of composing that produces difficulties for students, especially for English Language Learners (ELLs) in academic contexts. Generating original ideas is a daunting task for students as it involves conscious effort as well as diligent and continual practice (Myles, 2002).

Statement of the problem

In spite of the importance of writing in students' achievement and success, it has been reported that writing in English is one of the biggest challenges faced by ELLs at the university level (Fareed, Ashraf, & Bilal, 2016; Hyland, 2016; Kim, Mendenhall, & Johnson, 2010; Leki, 2017). The best way to describe the composition process is through analogy. In a way, producing any form of writing is analogous to building a wall. In order to achieve that, one needs tools and skills to get it done; tools are things like bricks, cement, and other building materials, while skills are required to put these bricks and cement together and raise a wall. Similarly, to be a proficient English writer, one needs to maintain both writing skills and writing tools. Writing skills here refer to the knowledge of different forms of writing as well as ability to generate new ideas, maintain good organization and pattern of thoughts, establish coherence and cohesion, etc.; while writing tools comprise many things, such as students' background in L2 grammar and vocabulary and more abstract elements, such as L2 culture and writing context. Knowledge about L2 writing skills has been sufficiently discussed in existing literature as evidenced in the existing writing models (Kim & Schatschneider, 2017; Moses & Mohamad, 2019; Youn-Hee, 2019), but this study is concerned with one of the tools that might improve students' overall writing. I propose that L2 students' writing issues stem as much from the lack of writing tools as

from the lack of writing skills. The focus of this study is on students' use of L2 writing tools, and in particular, formulaic sequences.

The acquisition of formulaic language is vital for achieving a native-like language fluency on the verbal as well as written level (AlHassan & Wood, 2015; Appel & Wood, 2016; Bestgen, 2017; Boers & Lindstromberg, 2012; Durrant, 2019; Granger & Bestgen, 2014; Hou, Loerts, & Verspoor, 2018; Paquot, 2017). There are several reasons why formulaic language is important:

- The use of formulaic language is ubiquitous.

- Meaning is often recognized through the use of formulaic language.

- Formulaic language demonstrates proficient functional command of the language.

In spite of the central importance of formulaic language in writing, ELLs generally tend not to use formulaic sequences (Howarth, 1998), and when they do, they overuse a limited number of them (Granger, 1998) and usually demonstrate a common pattern of misuse of formulaic sequences in their writing (Hyland, 2008; Scott & Tribble, 2006). This pattern manifests in three main observed forms: (1) wrong context or pragmatics; (2) change in form or vocabulary; and (3) literal translation from L1 and/or a lack of knowledge of an equivalent L2 expression.

From a pedagogical standpoint, course syllabi are lacking in the area of teaching of formulaic sequences in Yemen, where this study is located. This is due to the predominant focus in writing courses on the teaching of different types and forms of writing and thus overlooking the inclusion of formulaic sequences. Put differently, the typical foci of Yemeni writing courses would be to initially familiarize the students with the formats of the essay and then get them exposed to different types of writing, such as cause-and-effect and argumentative writing.

Accordingly, it is infrequent to see a writing curriculum emphasizing the teaching of formulaic sequences, and that leads teachers to address more the SKILLS of writing than the TOOLS.

General goal of the research

I designed an experimental study that would compare an approach to the teaching of writing in which formulaic language is given prominence, to a more typical approach to teaching L2 writing in which the teaching of formulaic language is downplayed and/or totally disregarded. The main purpose of this experiment is to test the hypothesis as to whether including formulaic sequences in L2 writing would improve the overall quality of the students' writing as measured by the raters. The study would take place in a university setting where students are studying English as a foreign language.

The end goal is to gauge the effectiveness of formulaic sequence use as a tool to improve students' written fluency in English. Additionally, if any effectiveness or benefit is revealed from the study, to what extent do formulaic sequences improve students' writing.

Research questions:

1. Does explicit instruction in formulaic sequences lead to greater use of these sequences, by word count, in Yemeni students' English essay writing? If so,

2. Is there a difference in the overall quality of students' essays as measured by raters' judgments prior to receiving explicit instruction and after receiving it?

   a. Do the research participants write more *naturally*, as a result of the intervention, as determined by raters' judgement?

   b. Do the research participants demonstrate more word count that could be accrued to the intervention?

3. Does greater use of the targeted formulaic sequences correlate with fewer grammatical errors?

    a. The greater use of targeted formulaic sequences, the fewer grammatical errors.

4. Is there a correlation between the students' English proficiency level, as determined by their admission test, and their use of formulaic sequences?

    a. The higher the student's English proficiency level, the more formulaic sequences are used in their writing.

CHAPTER TWO: Review of the Literature

This chapter intends to provide an overview of the findings and conclusions of theoretical and empirical research on (1) the role of formulaic sequences in L2 writing and (2) pedagogical approaches to teaching formulaic sequences in EFL academic written contexts to adult non-native speakers of English.

Vocabulary in L2 Writing

Previous research has shown that vocabulary is crucial for successful L2 academic writing (Coxhead, 2008; Coxhead & Byrd, 2007; Nation, 2001, 2005; Folse, 2008; Hinkel, 2004; Jones & Haywood, 2004; Li & Schmitt, 2009, Raimes, 1985). Thus, having a sufficiently large repertoire of English vocabulary would contribute to enabling L2 learners to perform proficiently in various writing tasks, such as comprehending, summarizing, and/or paraphrasing English texts (Folse, 2008; Hinkel, 2004). As a matter of fact, research findings propose that the type and nature of vocabulary employed in a written text significantly impacts its quality (Barkaoui, 2010; Engber, 1995; Ferris, 1994; Harley & King, 1989; Linnarud, 1986; McClure, 1991; Santos, 1988; Song & Caruso, 1996), and that appropriate word choice has an influential effect of a text "impressive-ness" (Engber, 1995; Harley & King, 1989; Linnarud, 1986; McClure, 1991).

Having established the role of vocabulary in the quality of L2 writing, it is safe to say that having *limited* vocabulary has a negative impact overall on the quality of L2 learners' writing, as well as their ability to communicate meaning appropriately, leading to increasingly serious lexical errors in their writing (Santos, 1988). In Santos's words, "[i]t is precisely with this type of error that language impinges directly on content; when a wrong word is used, the meaning is very likely to be obscured" (p. 48).

The role of vocabulary has also been explored from the L2 learners' perspective by Leki and Carson (1994). In their writing class of English for Academic Purposes (EAP), Leki and Carson (1994) surveyed 128 undergraduate L2 learners about the effectiveness of the course. One of the questions asked the students to identify the one thing they wished to have learned better in the course, and the predominant response to the question was vocabulary.

Because of its importance in overall second language proficiency, vocabulary is often included in writing rubrics, such as the ESL Composition Profile developed by Jacobs et al. (1981) as well as the Examination for the Certificate of Competency in English (ECCE).

In a nutshell, research findings suggest that vocabulary plays a significant role in L2 writing quality and assessment; meanwhile, students regard it as one of the most important skills they need to improve. Accordingly, L2 learners need continuous instruction in the use of vocabulary in academic writing contexts in order to help them communicate better in writing and demonstrate a native-like command of the language. In the next sections, I will explore the role of corpus linguistics on the systematic inquiry of authentic texts and how that gave birth to what we currently know as formulaic sequences.

Formulaic Sequences: Definitions, Characteristics, and Functions

Definition

Historically speaking, this notion of word combinations was first highlighted by Jespersen (1924), and described by Firth (1957), who stated that, "you shall know a word by the company it keeps" (p. 11). Boulinger (1976) attributed this phenomenon to words having "social networks" and concluded that learners memorize these word combinations as wholes. In their

article, Nattingen and DeCarrico (1992) suggested that frequent word combinations—such as formulaic sequences--play a significant role in communicating meaning in writing and speaking.

Formulaic sequences have been generally defined as prefabricated chunks of words that are processed, stored, and retrieved from memory as wholes (Ding, 2007; Wood, 2006; Wray, 2002). Krashen, Dulay, and Burt (1982) define them as, "whole utterances that are usually error-free and show no transitional stages of development or systematic order of acquisition. They are learned as unanalyzed wholes, much as one learns a single word" (pp. 232-233).

Basically, "formulaic sequences" is an umbrella term for many multi-word items, such as collocations, phrasal verbs, idioms, etc. The term formulaic sequences was first coined by Wray (2002) and defined as, "a sequence, continuous or discontinuous, of words or other elements, which is, or appears to be, prefabricated: that is, stored and retrieved whole from memory at the time of use, rather than being subject to generation or analysis by the language grammar" (p. 9). Wray (2002) put together a list of terms that have been used in the literature to refer to formulaic sequences:

> amalgams – automatic – chunks – clichés – co-ordinate - constructions – collocations – complex lexemes – composites – conventionalized forms – F[ixed] E[xpressions] including I[dioms] – fixed expressions – formulaic language – formulaic speech – formulas/formulae – fossilized forms – frozen metaphors – frozen - phrases – gambits – gestalt – holistic – holophrases – idiomatic – idioms – irregular – lexical simplex – lexical(ized) phrases – lexicalized sentence stems – listemes – multiword items/units – multiword lexical phenomena – noncompositional – noncomputational – nonproductive – nonpropositional – petrifications – phrasemes – praxons – preassembled speech – precoded

conventionalized routines – prefabricated routines and patterns – ready-made

expressions – ready-made utterances – recurring utterances – rote – routine

formulae – schemata –semipreconstructed phrases that constitute single choices –

sentence builders – set phrases – stable and familiar expressions with specialized

subsenses – stereotyped phrases – stereotypes – stock utterances – synthetic –

unanalyzed chunks of speech –unanalyzed multiword chunks – units

Characteristics & Functions

Formulaic sequences possess a set of unique characteristics that have been attributed by

several researcher and scholars in the field. Wray (2017) provides a brief and comprehensive

summary of these characteristics along with probable uses (Table 1). First and foremost,

formulaic sequences are frequent in language use and are familiar in nature. Additionally, they

could be semantically dense with irregular form.

Table 1
Characteristics of formulaic sequences

The formulaic sequence can be	This could be because
1. Frequent and familiar	• It is often used in the speech community (e.g., *Wotcha mate*) • It is the predominant way of conveying the meaning (e.g., *have a nice day*) • It conveys a meaning that often needs to be expressed (e.g., *at the top of the…*)
2. Semantically opaque and/or irregular in form	• It cannot be predicted and must be learned whole (e.g., *battle royal*) • It cannot be broken down to reveal meaning (e.g., *bullet point*) • It has not been regularized by "outsiders" (see Wray & Grace, 2007 for how nonnative speakers with social power can regularize irregularities)
3. Easy to produce and understand	• It is a single lexical unit (e.g., *woe betide*) • It trips easily off the tongue (e.g., *helter-skelter*) • It is familiar (e.g., *happy birthday*) • It is predictable (e.g., *one, two, three…*)
4. Longer than one word	• The named phenomenon happens to be a multiword string (e.g., *the day before yesterday*) • A multiword string has been preferred for some reason (e.g., *Before I answer that can I just…*)
5. Has an additional semantic or pragmatic role	• It is the agreed way of achieving something in the speech community (e.g., *break a leg* to wish an actor luck)
6. Signals the speaker's group identity	• It marks out speech community members from outsiders (e.g., *And I'm so, like…*)
7. Preestablished in form	• Its precise form has social significance (e.g., the text of the Quran, see Saleem, 2015) • It is a recognized way of creating a context for new information (Kuiper, 1996)

Adopted from Wray (2017)

Why Teach Formulaic Sequences?

Formulaic sequences are ubiquitous (Carter, 2004), essential (McCarthy, 1998), and most importantly "the very center of language acquisition" (Nattinger & DeCarrico, 1992, p. xv). Martinez and Schmitt (2012) suggested a number of reasons why formulaic sequences are important in language and language learning. First of all, the pervasiveness of formulaic

sequences in language use justifies the value of learning them as they make up approximately

20% (Sorhus, 1977) to 50% (Erman & Warren, 2000) of the language. Another reason why

formulaic sequences are important is that meanings and functions are usually communicated

through formulaic sequences (Martinez & Schmitt, 2012). For example, a native speaker would

often use idioms, phrasal verbs, collocations, and other expressions to communicate meaning.

Additionally, formulaic sequences are processed faster than those creatively generated

sequences. Finally, Boers, et al. (2006) suggested that formulaic sequences can improve the

overall impression of L2 learners' language production when used appropriately.

Previous empirical research revealed that there is a positive correlation between knowing

relatively frequent formulaic sequences and the ability to comprehend and produce language

fluently (Boers & Lindstromberg, 2012; Henriksen, 2013; Lindstromberg, Eyckmans, &

Connabeer, 2016; Peters, 2014; Schmitt & Carter, 2004; Barfield & Gyllstad, 2009). Research

also shows that English language learners (ELLs) capable of deploying plentiful formulaic

sequences in an appropriate and accurate manner are believed to have reached a linguistically

mature and proficient level (Boers et al., 2006; Dai & Ding, 2010; Schmitt, 2008; Stengers et al.,

2011). With regard to English academic writing, on the other hand, the type of formulaic

sequences seems to be a key factor in this matter, as fewer frequent formulaic sequences are

preferred (Bestgen & Granger, 2014; Crossley, Cai, & McNamara, 2012).

Vocabulary, Formulaic Sequences, and Corpus Linguistics

The field of corpus linguistics has been instrumental in facilitating the analysis of

authentic written and spoken texts both qualitatively and quantitatively through the use of

various computer software. Different corpora, such as the Corpus of Contemporary American

English (COCA) or the British National Corpus (BNC), store massive collections of text in

electronic databases that are made accessible for researchers around the globe. Recently, research

on corpus linguistics suggests that words are more often than not used in combinations rather

than in isolation (Biber & Barbieri, 2007; Biber & Conrad, 1999; Biber, Conrad, & Cortes, 2004;

Biber, Johansson, Leech, Conrad, & Finegan, 1999; Cortes, 2002, 2004, 2006; Coxhead & Byrd,

2007; Ellis, 2008; Ellis, 1996; Granger, 1998; Pawley & Syder, 1983; Schmitt, 2004;

Sinclair,1991, 2004; Wray, 2002).

A relevant study that was done on one of the corpora is Martinez & Schmitt's (2012)

study where they analyzed the British National Corpus (BNC) in order to find the most

frequently used formulaic sequences. The result of their study is a useful document with these

formulaic sequences that they later called the *formulaic list*. The items in this list were ranked

based on their frequency of use in speech, normal writing, and academic writing. This list

contained exactly 505 non-transparent formulaic sequences that was prepared and published by

Martinez & Schmitt (2012). For the purpose of this study, this list was retrieved from the

author's website, www.schmitt.com, and was filtered so that only sequences that are commonly

used in academic writing were included. The final list that was used for this study included 68

items (Appendix I).

Theoretical Framework

How do people actually learn? The intricacies of the learning process and how people

learn have puzzled educators and researchers throughout time, and an enormous body of research

has attempted to answer this question and untie its imaginary knots. The answer to this question

is essential because once we understand how people learn, we could design a method of

instruction that works best for them. As a matter of fact, a major research hypothesis in

multimedia learning proposes that multimedia instructional content that is designed considering

the way human mind works is more probable to cause learning than those that are not (Mayer,

2009).

In this context, Sweller (2009) argues that the key to good instructional design is

governed by our understanding and knowledge of human cognitive structures and how they form

a cognitive architecture. Our knowledge in this aspect will make a difference in the outcome and

quality of any intended instructional material and without it the instructional design is most

likely to fail its purpose and become ineffective. According to the aforementioned arguments, the

cognitive load theory integrates the principles of instructional design with our knowledge of

human cognitive structures (Sweller, 2009). Developed by Sweller in the late 1980s out of a

study of problem solving, cognitive load theory basically claims that as long as the mental

capacity of a learner is not overloaded, information can be transferred and retained pretty

effectively (Pappas, 2014). The key to understanding how this load and overload works is

strongly connected to our knowledge of working memory and long-term memory.

Given the architecture of the human brain, there is no logical central executive that would

organize and store new information (Sweller, 2009). Working memory and long-term memory

are essential structures to cognitive load theory. On the one hand, working memory is the place

where learning takes place, and it has two channels – visual and auditory. Unfortunately, our

working memory is severely limited in terms of its capacity to retain novice information.

Research shows that our working memory can hold only about seven elements of information,

and these will not last more than twenty seconds – unless otherwise rehearsed and stored in the

long-term memory (Sweller, 2009). Furthermore, our working memory is also limited in terms of

processing information. It is estimated to be capable of processing between two to four elements

of information simultaneously. Accordingly, when designing an instructional material, one must take into consideration these limitations of the working memory.

On the other hand, long-term memory plays the role of the central executive for working memory as the human cognition is governed by information that is stored and organized in the long-term memory (Sweller, 2009). As a matter of fact, Sweller (2009) used the analogy of a genetic code to best describe the role of the long-term memory. All the information in the long-term memory were learned mainly to adapt to an environment and thus the human cognitive activity is controlled by information in the long-term memory. According to these assertions, learning is defined as "an alteration in long-term memory" (Sweller, 2009, p. 20), so if no alteration has taken place in the long-term memory, no learning has occurred. Long-term memory is made up of schemas, which are sets of organized information. New schemas are constructed when learning takes place. For example, when a person reads a text, the schemas for letter combinations that form words and combinations of words that make up sentences can be recognized (Sweller, 2009). In other words, knowledge is stored in long-term memory in schematic form whether it is pictorial or verbal, written, or spoken.

Given what we know of long-term and working memory, cognitive load theory has three assumptions: dual channels, limited capacity, and active processing (Mayer, 2009). The dual-channel assumption purports that humans process information through separate channels for visual and auditory content. The second assumption pertains to the limited capacity of the working memory. Cognitive load theory assumes the limited capacity of the working memory in terms of the number of elements of information it can retain as well as the time restriction. Finally, the third assumption basically suggests that humans could engage in active learning through paying attention, organizing information, and integrating that information with other

knowledge (Mayer, 2009). Understanding these assumptions facilitates what cognitive load theory stands for and where it can be applied.

Cognitive load theory elucidates that any input that is received by the working memory constitutes a cognitive load. When used in an instructional design, a picture, text, video, etc. will have an amount of load on the working memory, and cognitive load theory aims at facilitating this load and help learning take place effectively (Paas, Renkl & Sweller, 2004). Cognitive load theory identifies three types of cognitive load: extraneous load, intrinsic load, and germane cognitive load (Sweller, 2009). Each kind of cognitive load entails some kind of cognitive processing, i.e. extraneous, essential, and generative processing (Mayer, 2011).

Extraneous cognitive load is a load on the working memory that is irrelevant to the intended learning task. Put differently, an extraneous cognitive load is a waste of the working memory and a distraction from the learning. This could be due to a poorly designed material or any unintended instructional design mistakes. For example, ESLFLOW.com is a website resource for English as a second language (ESL) online lessons. The information is presented in a single color with a single background color. There are no visual aids and activities have no clear instructions. Besides, the navigation buttons to move from one page to the next are located at the bottom of the page and are not easily found. This poor design entails that only the verbal channel will work here as no visuals were provided and that will overload this channel. Also, the place where the navigation buttons located and the way they were designed do not stand out in the web page for the learner to find them with ease. Therefore, the learner wastes time and effort during the learning task trying to figure out how the page is designed. Given all these issues, there will be high extraneous cognitive load, which will hinder the learning.

Intrinsic cognitive load comes to play when the learner is presented with complex instructional material that requires essential processing. This type of load is determined by the levels of element interactivity (Sweller, 2009); the higher the element interactivity, the higher the cognitive load on the working memory. In other words, intrinsic cognitive load has to do with the complexity of the instructional material and how much attention is needed. For example, Baldi is an educational game that is designed specifically for kindergarteners to learn math using either smart phones or tablets. To understand how intrinsic cognitive load works, we see that Baldi presents some easy math questions, such as (1+2= ???). This question has low intrinsic cognitive load; however, a question like (4+8+3-2+1= ???) will have high intrinsic cognitive load for a kindergartner due to its complexity. It is important to note here that cognitive load will be higher for novice learners but might not be for expert learners as the information will not be entirely new to them. Thus, when designing instructional materials, one should try reducing the complexity of the tasks through presenting the information gradually and with the help of both visual and auditory channels.

The third type of cognitive load is the germane load. This type of load is the result of "effortful" learning and leads to creating connections between new information and pre-existing knowledge. When we defined learning earlier, we stated that learning happens when the long-term memory is altered. This is exactly what happens with the germane cognitive load, i.e. new schemas are constructed, and learning takes place. A good example of germane cognitive load could be found in EdX online lessons. During the presentation of each lesson, there are pop-up quizzes that are inserted in order to make sure that learning took place and the student took the effort and paid attention.

Pedagogical Framework

Up to the time of writing this dissertation, the area of pedagogical methods for teaching

formulaic language and its impact on English language learners has been under researched

(Hatami, 2015). This is true in part because of "the difficulty of defining and operationalizing

this rather elusive language phenomenon at the level of precision that is required to serve as an

effective theoretical foundation to build on" (Dornyei, 2009, p. 298). Nevertheless, a number of

studies examined the learning of formulaic sequences in a classroom setting and found

encouraging effects on learners' awareness of formulaic sequences (Jones & Haywood, 2004),

the number and range of formulaic sequences they can produce over time (Taguchi, 2007; Wible,

Liu, & Tsao, 2011), and learners' oral proficiency development (Boerset al., 2006). Hatami

(2015) proposed a pedagogical framework to teach formulaic sequences that could be effective

and promises positive results on students. This pedagogical framework mainly argues that the

teaching of formulaic sequences should not be a one-step process but rather a three-step process

in order to achieve its results. These steps are noticing, retrieving, and generating.

First and foremost, in order for students to use formulaic sequences more, they need to be

made aware of their importance on their language repertoire (Hatami, 2015). This step is called

noticing, and it could be achieved by the teacher telling the students of the essential role

formulaic sequences play in language and how they help a language learner demonstrate good

command of the language. Noticing could also be achieved by presenting the students with

reading passages that contain formulaic sequences that are made salient for the students to

notice.

The second step is retrieving where students are presented with chances to actively and

repeatedly retrieve the targeted formulaic sequences from their memory either in a receptive or

productive manner. For example, after explicitly teaching a number of formulaic sequences, the teacher would provide the students with a discourse completion task where a passage has some blanks that are to be filled with formulaic sequences that they have learned. This would allow the students to think back and retrieve them from their memory. The more retrieval that happens, the stronger the schemas are created in the long-term memory and therefore the more accessible these formulaic sequences are to the students.

Finally, the students need to use formulaic sequences in different contexts they originally learned them in; this is called generating. After the students have learned the targeted formulaic sequences and repeatedly retrieved them back and forth from their memory, it is essential that they start using them in their writing. This could be achieved through several ways. One possible class activity is to choose a number of formulaic sequences and ask the students to create a sentence around them. Another potential example is to ask the students to write a short essay implementing at least 20 formulaic sequences they had learned in class. This way, the teacher would make sure that the students learned the targeted formulaic sequences and are able to use them properly in the right context.

In the grand scheme of things, it is important to note here that Hatami's (2015) pedagogical framework operates within the communicative language teaching approach (CLT). The CLT approach is a generally accepted pedagogical approach in the field of foreign language teaching. It does not merely focus on the traditional structural syllabus but rather considers the communicative dimension of the language (Richards, 2005). It emphasizes the importance of interaction and has been proven to provide motivation and vitality in the classroom (Xue, 2019). Furthermore, what distinguishes CLT from a more traditional approach is that it is student oriented and capitalizes the needs and interests of the students. In the context of teaching

formulaic sequences, presenting the students with reading passages that contain formulaic

sequences was the first step in Hatami's (2015) framework so that the students would notice

them. After that, a follow-up discussion about their importance ensued backed by Hatami's

(2015) retrieving and generating steps. This shows that this framework operates well under the

CLT approach and capitalizes its benefits in second language teaching.

CHAPTER THREE: Methods

Context

This study took place in the Department of English, Faculty of Arts & Humanities, in Sana'a University, Yemen. Yemen is an Arab country where Arabic is the official written and spoken language. The Department of English offers an undergraduate degree in English Studies and admits students on an annual basis. The department annually receives between 700 to 800 applicants between June and July every year, and usually grants admission to approximately 120 to 150 applicants. These applicants are expected to demonstrate some verbal and written skills of English, and only the best among all the candidates get admitted. Applicants take an admission test that measures their four language skills: reading, writing, speaking, and grammar, and according to the results, the admission committee meets and decides who gets admitted. The admitted students are then descendingly sorted in one sheet based on their admission test scores and are later assigned to either group A or B. To randomly assign students into the groups, odd numbers in the list are assigned to group "A" while the even numbers are assigned to group "B" (and hence ensuring comparable groups). The Department of English program is a four-year program. Students during the first two years of the program take language skills courses, such as grammar, reading, writing, speaking, etc., as well as some university required courses, such as Arabic and Islamic Studies. In the latter two years, students start taking more advanced English linguistics and literature courses.

Participants

The participants in this study were level two students in the two groups who were taking a course in Writing Academic English (coded: Writing-201) at the time of the study. This course mainly aims at educating students about academic essay writing in English. Around 70% of the

students are females and 30% are males. All the students are Yemini citizens who mainly reside

in Sana'a, the capital city. They are all native speakers of Arabic and have had at least one year

of formal English instruction at the university level, so on average they could be viewed as

intermediate learners of English. All participants range from 19 to 23 years old and all are full-

time students.

As stated in the context section, students were assigned into two groups, A & B, in a

systematically random manner. Systematic random sampling is the process of randomly

assigning research participants into groups based on a system of intervals (McMillan &

Schumacher, 2010). The system of intervals used in this study is the odd and even interval

system. Put differently, student number one would be assigned to group "A", student number

two to group "B", and so on and so forth. Thus, after the students were put on a list ordered

descendingly by their admission scores, I select the beginning number (in this case number one),

select an interval (odd and even), and then split the original list into two randomly assigned and

comparable lists of participants.

The instructor of Writing Academic English was the same for the two groups. He is a

male assistant professor who has been teaching English writing for around fifteen years in a

university setting. He is a Yemeni citizen whose L1 is Arabic, and he graduated from the same

program that he now teaches in July 2003. He is known to the researcher and agreed to conduct

the intervention in the two sections of the course for the purpose of the research. He also agreed

to implement the research protocol on behalf of the researcher, and with as much adherence to

the research design as possible. An instruction manual was created to help the teacher navigate

through the details of the experiment (see Appendix III). The researcher followed up with him at

the end of every week in order to ensure a smooth and successful implementation of the study

and establish fidelity for the study.

Intervention & Study Materials

The researcher prepared a four-week intervention to be implemented in addition to the

original curriculum. The original curriculum makes use of the 4th edition of a Pearson Longman

book entitled *Writing Academic English* by Ann Hogue (2006). This book mainly talks about the

different parts of the essay and slightly alludes to the use of coordinating and subordinating

conjunctions in writing, but in no way does it present other useful formulaic sequences that the

students could utilize to improve their writing. The intervention took around 15 minutes out of

the 90-minute class that met twice a week. The teacher received the lists of the formulaic

sequences (see Appendix I) to be taught and implemented as vocabulary activities at the end of

every class meeting for four weeks. The instructor was trained on how to implement Hatami's

(2015) pedagogical framework in teaching the formulaic sequences mentioned in the previous

chapter. Accordingly, besides the typical instruction, there was the addition of instruction and

practice in the use of the most common formulaic sequences from the Martinez and Schmitt

(2012) corpus, as chosen by the researcher.

Instruments used for measuring the students' learning growth come from the Instrument

for Research into Second Language (IRIS) website. The first instrument is an academic writing

rubric created by Salim (2015) and titled *Transparent Academic Writing Rubric* (TAWR)

(Appendix II). This instrument was originally designed for use with Turkish English learners,

whose ages resemble the participants in this study. The original TAWR has 50 items divided into

writing an introduction (8 items), citation (16 items), academic writing (8 items), idea

presentation (11 items), and mechanics (7 items). For the purpose of this study and given the

scope of the course where this study was implemented, the researcher decided to remove the

citation part from the original rubric (items 9 through 24) as it is not part of the course syllabus

and the study participants are not aware of citational methods as of yet. The researcher added

another section at the end of the rubric to measure the naturality of the writing (items 35 through

40), thus the final rubric has 40 items. Naturality of the writing in this context refers to the

degree to which the student's writing resembles that of a native speaker. In other words, the more

foreign expressions are used the less natural the writing is. The validity of the items was

established through peer-reviewing and the instrument's publication in a peer-reviewed journal.

As reported in the original paper, the internal reliability of the TAWR has a Cronbach's alpha of

.89. Furthermore, intra-rater reliability was reported at Pearson's $r(55)=.99$, $p < .001$, and inter-

rater reliability was also high, at $r(55)=.97$, $p < .001$.

Design & Procedures

From an ethical and moral standpoint, the English Department, where this study took

place, demanded that all students receive the treatment. Therefore, a traditional between-subject

(experimental vs. control group) design was not initially an option to consider. Alternatively, the

researcher proposed a Latin Square counterbalanced mixed-factorial design to implement and

extract the data. In this design, all the students will receive the treatment but not in the same

order/time. The researcher changed the order in which each group received the treatment.

Basically, the overall study took eight weeks from start to finish but was divided into two

sessions, four weeks each. In the beginning, students took a pre-test (in the form of an essay

prompt), to measure their initial writing performance and use of formulaic sequences before they

received any instruction. After that, a four-week session followed. During these four weeks, only

group "A" received the treatment (experimental group) while group "B" did not (comparison

group). By the end of the four weeks, both groups took another test (another essay prompt) as a way to establish how much learning had occurred. Initially, the pre-test and this test were analyzed to determine if a difference took place and if any differences were found between the groups. If the analyses demonstrated statistically significant differences among the students, the researcher can conclude that the proposed intervention improves students' writing. The second four-week session directly followed but now group "B" was the group to receive the treatment while group "A" was the comparison group. At the end of the second session, the post-test was given to the students (in the form of essay prompt). For a better grasp of the design, the researcher had prepared a chart that presents the design, see Figure 1.
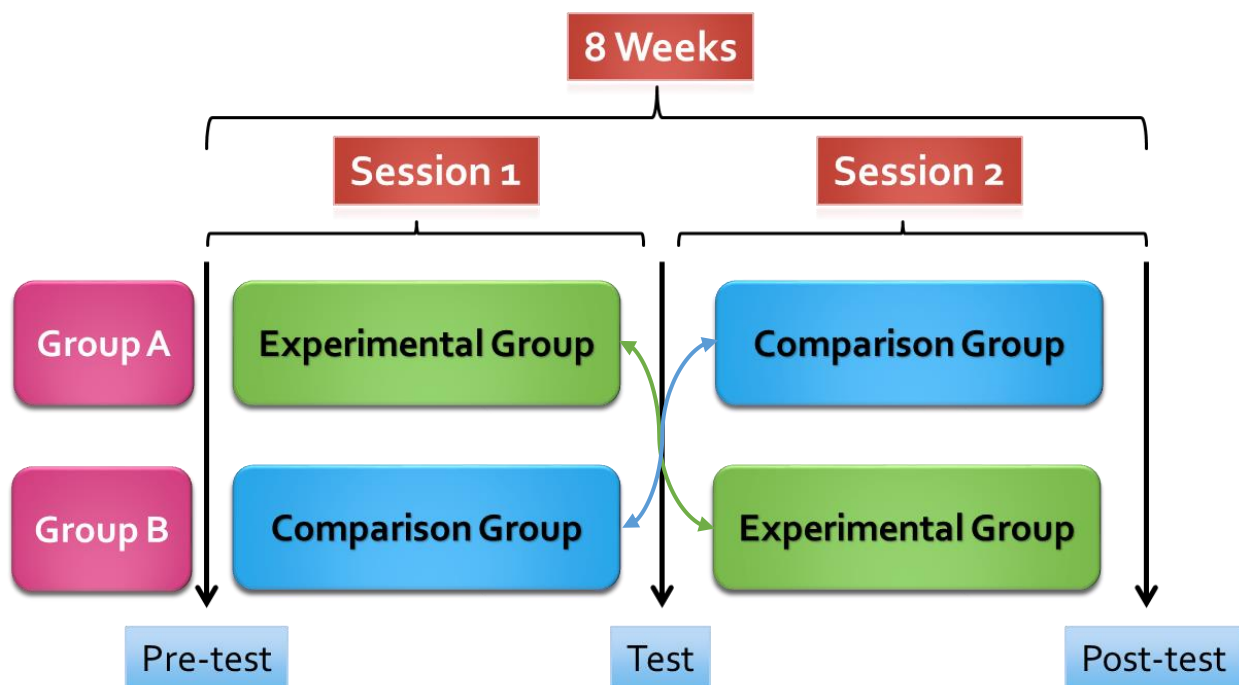
Figure 1: Counterbalancing design

After the study was implemented and all the data were collected, group "A" students' scores in the first session along with group "B" students' scores from the second session were merged together as the experimental group. Similarly, group "B" students' scores in the first

session along with group "A" students' scores from the second session were merged together as the control group. This way, the sample has doubled, and another analysis could be done to confirm the initial results. Another potential benefit of this design was that the researcher could measure students' retention of formulaic sequences. This was done by studying group "A" in the first and second sessions and comparing their results in a repeated measure type of design.

Techniques for Eliciting Writing Samples

Using the TAWR, the researcher elicited narratives as writing samples from the students. The benefit of this method was that students do not need to have prior knowledge about any given topic and thinking of supporting ideas should not be a major issue. They were asked simply to write a story about something that happened to them, such as last time they were on vacation and what happened. The only issue here is that the researcher had to create a prompt that would elicit formulaic structures in the participants' responses. At the end, the researcher settled on a number of essay prompts that were used to collect data, see Appendix V.

Analysis

Looking at the main research questions, the latter two, "Does greater use of the targeted formulaic sequences correlate with fewer grammatical errors?" and "Is there a correlation between the students' English proficiency level, as determined by their admission test, and their use of formulaic sequences?" were answered using a Pearson correlation. The assumptions of the Pearson product moment correlation was tested, i.e. level of measurement, related pairs, absence of outliers, normality of variables, linearity, and homoscedasticity. To answer the former two, the researcher suggested the following series of analyses.

Since the design of this study was a counterbalanced mixed factorial design, there are two types of effects at play here, i.e. between-subject as well as within-subject effects. Accordingly, a

mixed effect analysis was required to yield the best results. Consequently, data from the first

session, both the pre-test and post-test, of the two groups was analyzed using IBM SPSS Version

26. The outcome of this analysis provided the initial results of the study. After that, data of

students when they were in the experimental group as well as when they were in the comparison

group was constructed and a similar analysis was conducted to see if the results still held.

To further confirm that the treatment actually worked, the researcher proposed that a

regression discontinuity design (RDD) be conducted. RDD entails that there is an intervention

and participants take part in that intervention based on a cutoff score. Fortunately, the researcher

had the students' admission test scores and data for all the students, experimental as well as

comparison groups. If the RDD confirms it, the researcher can confidently say that the

intervention was the cause of the difference and that it helped the students improve their writing

better than the traditional approach.

CHAPTER FOUR: Results

Introduction

   In this section, I will attempt to answer the research questions in view of the collected data. I will explain how the data was cleaned and prepared for the analysis. Additionally, descriptive statistics and demographics of the sample will be presented. Results of the analyses will be presented using tabular as well as visual presentations when appropriate.

Data Cleaning

   After the experiment was implemented and essays were collected from the students, all essays were deidentified and student identification numbers were generated. Each student had a unique identification number so that the researcher could identify their records later. After that, the essays were given to the three raters to score using the *Transparent Academic Writing Rubric* (TAWR). To save time and effort, the researcher transferred the rubric into an online form so that the raters were able to record their ratings directly online (see this link for the online rubric: TAWR Rubric). The online rubric was mobile friendly to accommodate the need for the three raters to input their ratings using their personal cellular devices.

   After all the three raters finished scoring the students' three essays, the raw data was in long format where each student had three cases, essays one through three. The data was then transformed into wide format where each student had only one row of data. This was done because the type of analysis to be performed on the data requires wide format of the data. After the data was placed into wide format, there were 138 students who finished the first essay, 134 the second essay, and 141 the third essay. Ten students did only one essay and eight students did two, so the researcher kept only those who completed all the three essays. The final sample size was 123 after the missing cases were excluded.

Sample Descriptive & Demographics

The participants in this study were the level two students in the two groups who are

taking a course in Writing Academic English (coded: Writing-201) at the time of the study.

Sixty-nine percent of the students are females and 31% are males (see Figure 2). Both male and

female students are distributed equally in the two groups - 48 females and 12 males versus 53

females and 10 males in groups A and B, respectively (see Table 1 and Figure 3).

*Table 1. Group * Gender Crosstabulation*

Count

		Gender		Total
		Male	Female	
Group	Group A	12	48	60
	Group B	10	53	63
Total		22	101	123
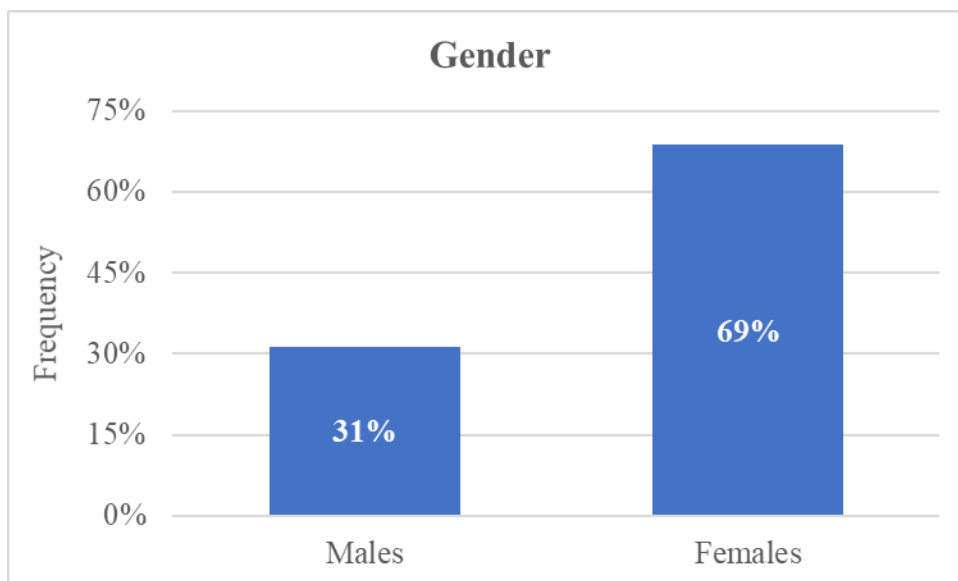
Figure 2: Participants by gender

Gender Distribution by Group
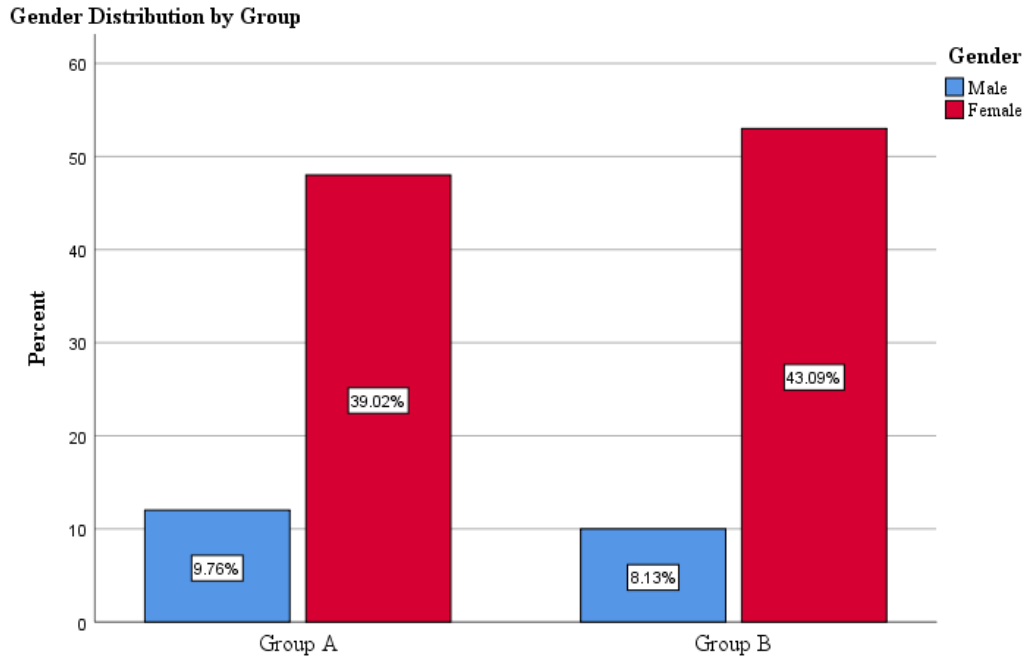
Figure 3: Male and female distribution across groups.

Students' scores on the admission test were retrieved as well, but only for 93 students. These are their admission scores when they were admitted into the program. These scores are used in the subsequent analyses to answer some of the study's research questions and are considered the students' proficiency level upon joining the program. The distribution of the students' admission test scores seems to be approximately normally distributed, although slightly positively skewed, with skewness of .65 (SE = .25) and kurtosis of .28 (SE = .50) (see Table 2 and Figure 4). As a rule of thumb, George & Mallery (2010) argue that the values for skewness and kurtosis should fall between a minimum of -2 and a maximum of +2 for a distribution to be considered univariately normal. Admission test scores in the sample ranged from a minimum of 42 to a maximum of 82 out of 100 (M = 56.8, SD = 9.1).

Table 2. Admission Test Scores

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Admission_Te st	93	40	42	82	56.80	9.098	.651	.250	.279	.495
Valid N (listwise)	93									
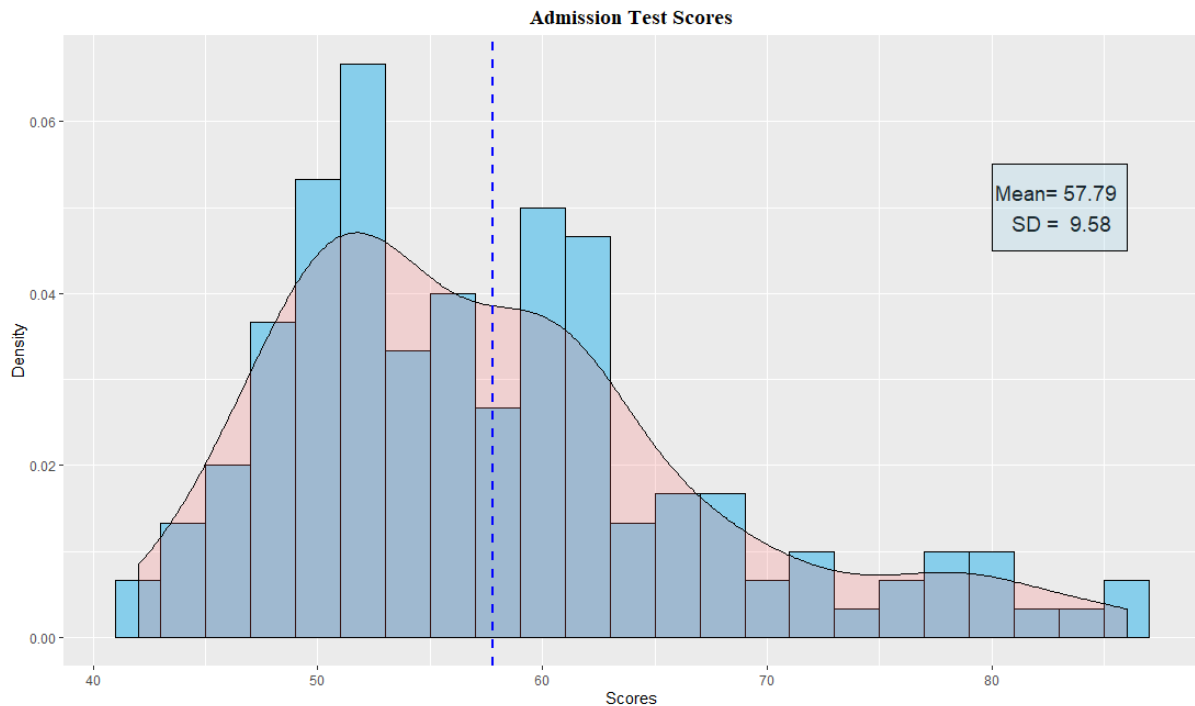
Figure 4. Admission Test Distribution

Looking at admission test scores by gender, scores were very comparable for both genders with (M = 60.25, SD = 9.93) for males and (M = 56.08, SD = 8.82) for females (see Table 3 and Figure 5). Although gender is not a variable in this study, the researcher thought it would be wise to make sure no differences could be accrued to gender.

Table 3.Admission_Test

Gender	Mean	N	Std. Deviation
Male	60.25	16	9.930
Female	56.08	77	8.815
Total	56.80	93	9.098
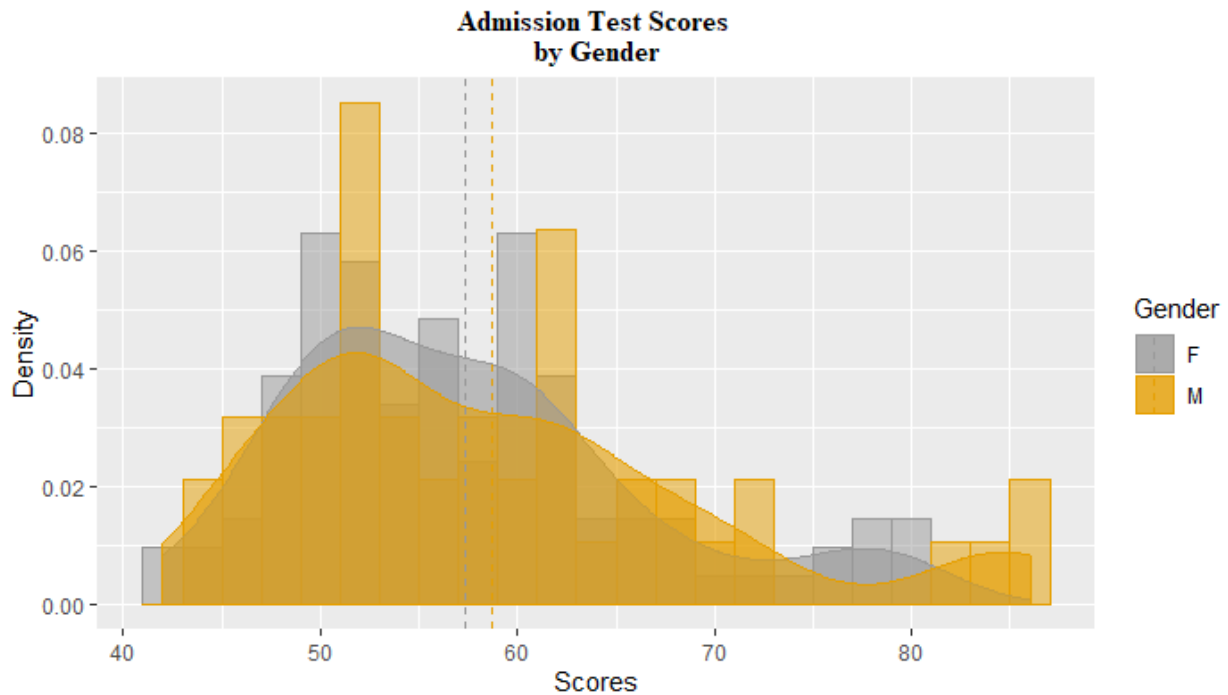
Figure 5. Admission Test Scores Distribution by Gender

Inter-rater Reliability

When the essays were collected from the students at the three different intervals, the

essays were scored by three different raters. As stated in chapter three, the raters were trained on

how to use the rubric in order to maintain agreeability among them on the ratings and thus

achieve good inter-rater reliability. In order to measure inter-rater reliability for quantitative data,

Shrout & Fleiss (1979) suggested that an interclass correlation (ICC) would be useful due to its

high flexibility. In the case of this study, the ICC would be useful especially given that we have the same number of ratings for every student and the raters are the same for all the students. These are prerequisites to using ICC to measure interrater reliability. The ICC also assumes that the variance among raters merely adds noise to the estimates of the students and the mean error for the rater is equal to zero (Shrout & Fleiss, 1979). Put differently, one rater might rate Student X high and Student Y low, this variance should even out across several raters.

A reliability analysis was carried out on the ratings of the three essays. Cronbach's alpha showed the overall ratings to reach high correlation, $\alpha = 0.81$ (Table 4). A complete correlation matrix is presented in table 5 below.

Table 4. Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.810	.825	9

Table 5. Inter-Item Correlation Matrix

	Total1_1	Total1_2	Total_1_3	Total2_1	Total2_2	Total2_3	Total3_1	Total3_2	Total3_3
Total1_1	1.000	.510	.657						
Total1_2	.510	1.000	.636						
Total_1_3	.657	.636	1.000						
Total2_1				1.000	.471	.499			

Total2_2	.471	1.000	.519			
Total2_3	.499	.519	1.000			
Total3_1				1.000	.641	.316
Total3_2				.641	1.000	.399
Total3_3				.316	.399	1.000

In the ICC analysis results shown in table 6, the ICC was computed with 3 raters across

123 ratees in all three essays. A high degree of reliability was found between the ratings of the

three raters. The average measure ICC was .810 with a 95% confidence interval from .749

to .861 (F(99,792)= 5.273, p<.001). To elaborate on this more, the single measures presented in

the first line of table 6 shows that ICC = .322 and the average measures is ICC = .81. Therefore,

81% of the variance in the mean of these raters is real and thus reliable.

Table 6. Intraclass Correlation Coefficient

	Intraclass Correlation [b]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.322[a]	.249	.409	5.273	99	792	.000
Average Measures	.810	.749	.861	5.273	99	792	.000

Two-way random effects model where both people effects and measures effects are random.

a. The estimator is the same, whether the interaction effect is present or not.

b. Type C intraclass correlation coefficients using a consistency definition. The between-measure variance is excluded from the denominator variance.

Results and Findings

This study asked four major research questions and two secondary questions and made one research hypothesis.

1. Does explicit instruction in formulaic sequences lead to greater use of these sequences, by word count, in Yemeni students' English essay writing? If so,

2. Is there a difference in the overall quality of students' essays as measured by raters' judgments prior to receiving explicit instruction and after receiving it?

   c. Do the research participants write more *naturally*, as a result of the intervention, as determined by raters' judgement?

   d. Do the research participants demonstrate more word count that could be accrued to the intervention?

3. Does greater use of the targeted formulaic sequences correlate with fewer grammatical errors?

4. Is there a correlation between the students' English proficiency level, as determined by their admission test, and their use of formulaic sequences?

   a. The higher the student's English proficiency level, the more formulaic sequences are used in their writing.

To answer the first research question, an analysis of variance (ANOVA) was conducted comparing the mean differences between the word count of formulaic sequences across the experimental and comparison groups. The experimental group comprised of data for the students of both Groups A and B when they were undertaking the treatment, and the comparison group comprises of the data for the students in both groups when they did not receive any treatment. The average number of formulaic sequences in the experimental group was (M = 7.29, SD =

2.58, N = 123) while the average number of formulaic sequences in the comparison group was

(M = 5.59, SD = 3.359, N = 123) (Table 7 & Figure 6). Initially we see that there was a group

advantage for the experimental group but the question remains, is that different statistically

significant?

Table 7. Descriptive Statistics

Dependent Variable: FS_Count_1

Group	Mean	Std. Deviation	N
Experimental	7.29	2.583	123
Comparison	5.59	3.359	123
Total	6.44	3.108	246

To see if that group difference was statistically significant, results of the ANOVA test

showed that the group differences were indeed statistically significant, $F(1, 245) = 19.728$, $p <$

.01 (see Table 8). In other words, according to the results of the analysis one could assume that

explicit instruction of formulaic sequences leads to greater use of these sequences, by word

count, in Yemeni students' English essay writing. It is important to state here that although the

results show statistically significant differences, the effect is weak (Eta Squared = .075).

Table 8. Tests of Between-Subjects Effects

Dependent Variable: FS_Count_1

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	177.076[a]	1	177.076	19.728	.000	.075
Intercept	10206.653	1	10206.653	1137.105	.000	.823
Group	177.076	1	177.076	19.728	.000	.075
Error	2190.144	244	8.976			

Total	12573.873	246
Corrected Total	2367.220	245

a. R Squared = .075 (Adjusted R Squared = .071)

The marginal means for both groups are shown in table 9 and visualized in figure 6. Also, the 95% confidence interval for both the experimental and comparison group are presented in the latter columns of table 9.

Table 9. Estimated Marginal Means - Group

Dependent Variable: FS_Count_1

			95% Confidence Interval	
Group	Mean	Std. Error	Lower Bound	Upper Bound
Experimental	7.290	.270	6.758	7.822
Comparison	5.593	.270	5.061	6.125
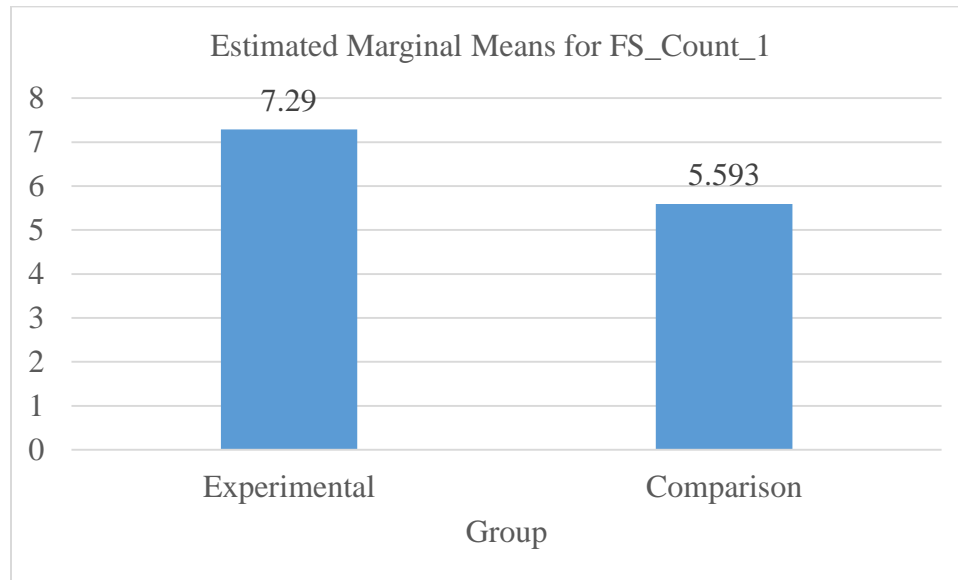
Figure 6 Estimates of Marginal Means of Formulaic Sequences by Word Count

To answer the second and major research question, a mixed analysis of variance (ANOVA) was conducted with the within-subject factor Time (three levels; essay 1, essay 2, and

essay 3), and the between-subjects factor Group (two levels: control and experimental). The

Greenhouse-Geisser correction was used for tests of effects with two degrees of freedom in the

numerator. On the first essay before any treatment has taken place, table 7 shows that the average

score for Group A was (M = 80.56, SD = 14.97, N = 60) and for Group B was (M = 80.51, SD =

15.13, N = 63). In the first four-week session, Group A was the experimental group and Group B

was the control group. On the second essay, the average score for Group A was (M = 98.21, SD

= 15.04, N = 60) and for Group B was (M = 88.32, SD = 13.10, N = 63). In the second four-

week session, Group B was the experimental group and Group A was the control group. On the

third essay, the average score for Group A was (M = 103.24, SD = 9.66, N = 60) and for Group

B was (M = 110.27, SD = 10.36, N = 63) (see Table 10 and Figures 7 & 8).

Table 10. Descriptive Statistics

	Group	Mean	Std. Deviation	N
Essay 1	Group A	80.56362179 4871780	14.97069736 1467236	60
	Group B	80.50824175 8241770	15.13152157 2006780	63
	Total	80.53525641 0256420	14.99152269 6753295	123
Essay 2	Group A	98.21492792 9415680	15.03933259 3010961	60
	Group B	88.31849457 7995880	13.09720530 3740934	63
	Total	93.14602304 2103040	14.87374061 5733986	123
Essay 3	Group A	103.2387617 37089180	9.660191434 433061	60
	Group B	110.2674069 10599380	10.35592001 1420492	63
	Total	106.8387995 08887130	10.58658167 7338916	123

Essay Means across Groups & Time
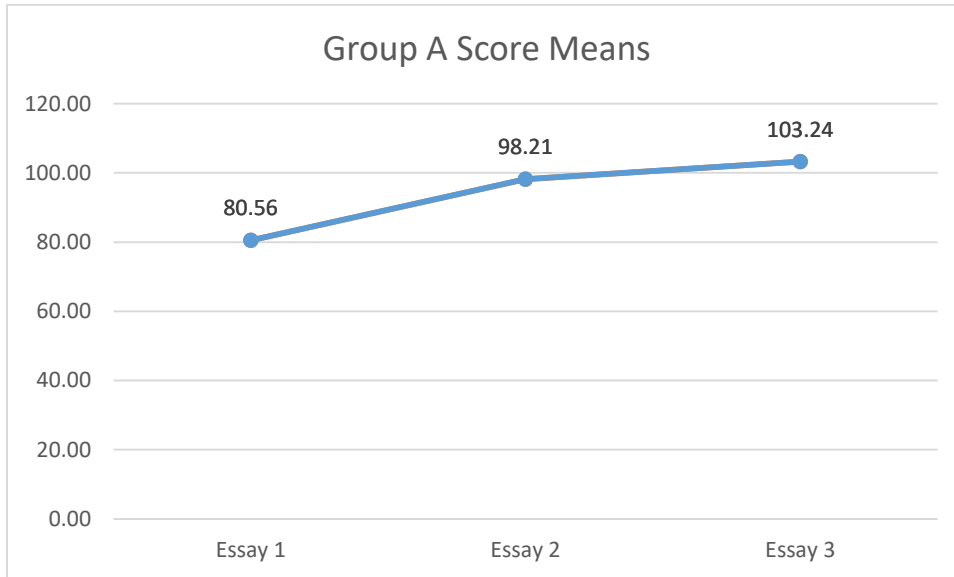
Figure 7. Essay Averages across Group A and Time
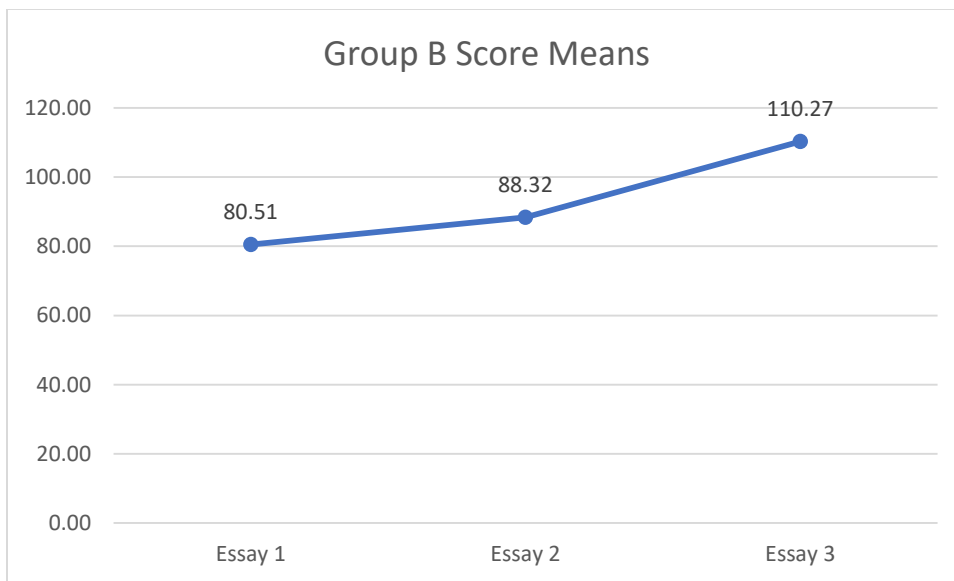
Figure 8 Essay Averages across Group B and Time

Before the actual analysis, some tests need to be carried out to ensure that the test's

assumptions are met and not violated. First and foremost, the normality assumption was checked

visually using a histogram. As shown in figures 9, 10, and 11, the three variables are normally

distributed. Additionally, homogeneity of variance is another assumption that was tested using

Box's M test. The null hypothesis for this test is that the observed covariance for the dependent

variables are equal across groups. As shown in table 8, the Box's M test was not statistically

significant, (Box's M = 3.068, $F(6, 105383) = .498$, $p = .811$) (see Table 11), and thus the

homogeneity of variance assumption is not violated.

Table 11. Box's Test of Equality of Covariance

Matrices[a]

Box's M	3.068
F	.498
df1	6
df2	105383.227
Sig.	.811

Tests the null hypothesis that the observed covariance

matrices of the dependent variables are equal across

groups.

a. Design: Intercept + Group

 Within Subjects Design: Time
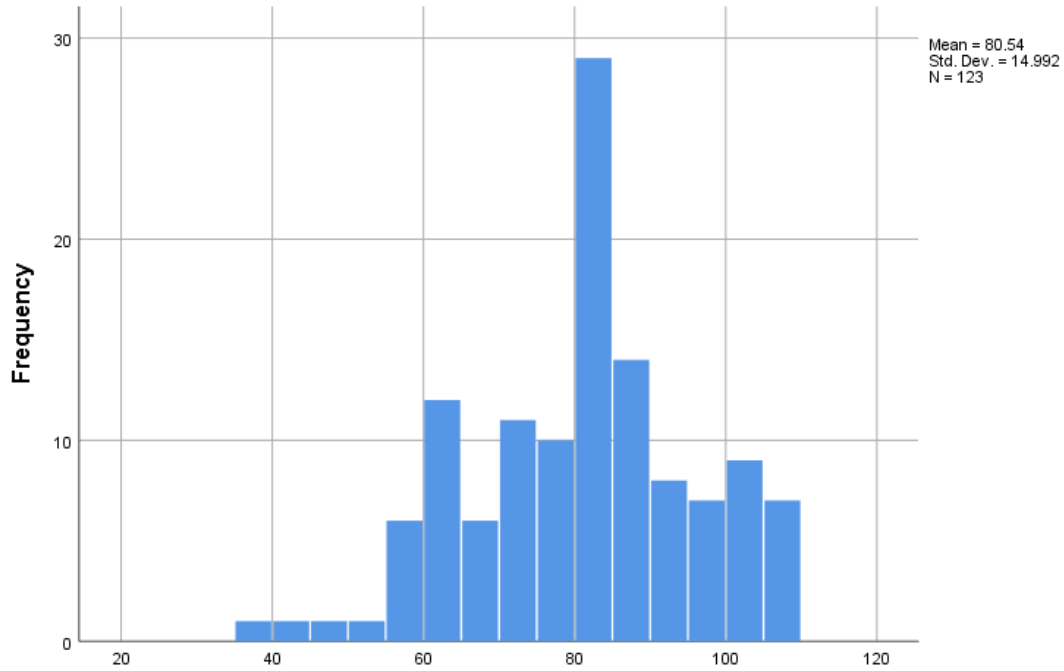
Figure 9. First Essay Scores Distribution
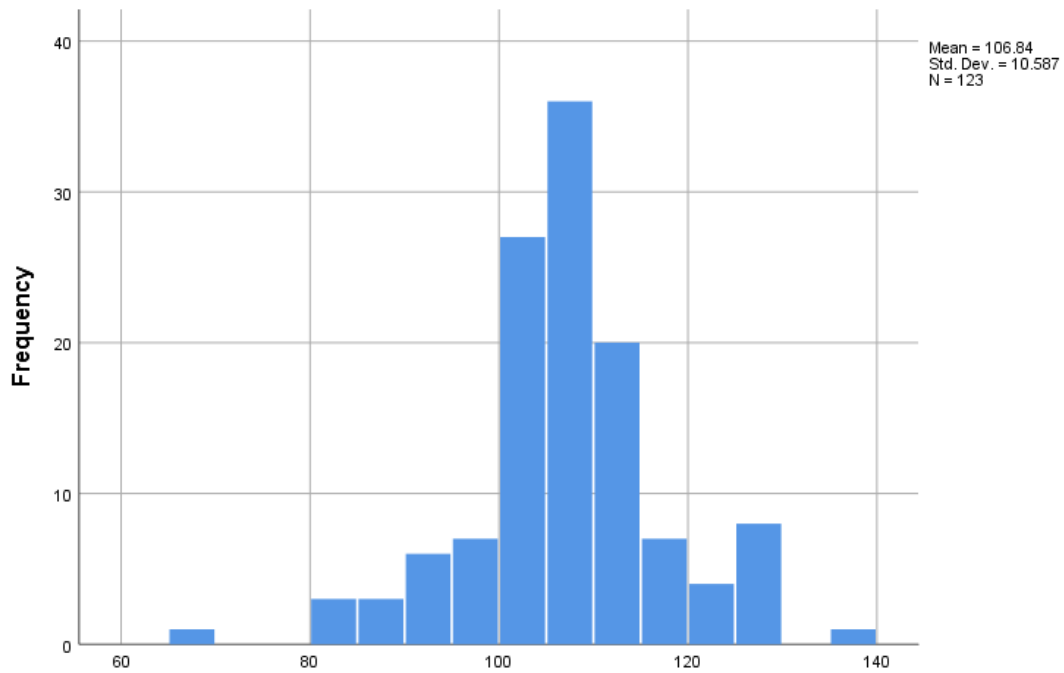
Figure 10. First Essay Scores Distribution
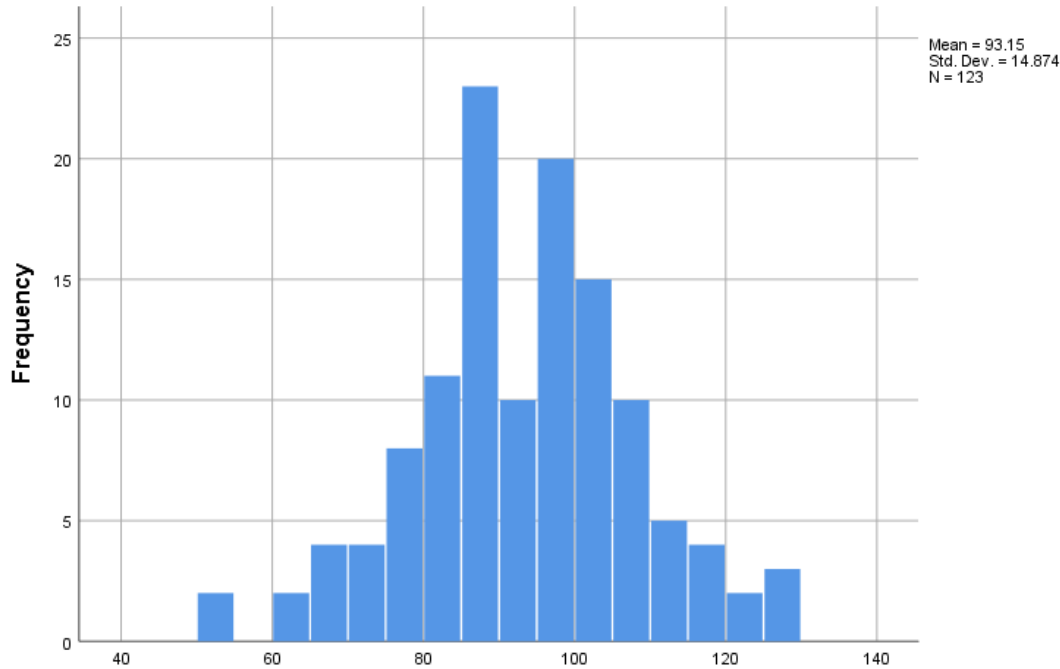
Figure 11. First Essay Scores Distribution

A 3 (Time) x 2 (Group) mixed-model ANOVA results revealed statistically significant within-subjects effects of time, $F(2, 122) = 197.06$, p < .01 (Table 12). Additionally, interaction effect between time and group was found statistically significant, F(2, 122) = 20.708, p < .01. In other words, students' progress from essay 1 to essay 3 was found to be statistically significant with high effect (Eta Squared = .62) (Table 12).

Table 12. Tests of Within-Subjects Effects

Measure: Writing_Fluency

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Sphericity Assumed	42257.904	2	21128.952	197.061	.000	.620
	Greenhouse-Geisser	42257.904	1.948	21695.818	197.061	.000	.620
	Huynh-Feldt	42257.904	1.996	21176.264	197.061	.000	.620

		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
	Lower-bound	42257.904	1.000	42257.904	197.061	.000	.620
Time * Group	Sphericity Assumed	4440.609	2	2220.305	20.708	.000	.146
	Greenhouse-Geisser	4440.609	1.948	2279.873	20.708	.000	.146
	Huynh-Feldt	4440.609	1.996	2225.276	20.708	.000	.146
	Lower-bound	4440.609	1.000	4440.609	20.708	.000	.146
Error(Time)	Sphericity Assumed	25947.361	242	107.220			
	Greenhouse-Geisser	25947.361	235.677	110.097			
	Huynh-Feldt	25947.361	241.459	107.461			
	Lower-bound	25947.361	121.000	214.441			

On the other hand, the ANOVA found no statistically significant main effects of the between-subjects effects for group, F(1, 122) = .282, p = .597.

Table 13. Tests of Between-Subjects Effects

Measure: Writing_Fluency

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	3225252.369	1	3225252.369	10377.329	.000	.988
Group	87.533	1	87.533	.282	.597	.002
Error	37606.551	121	310.798			
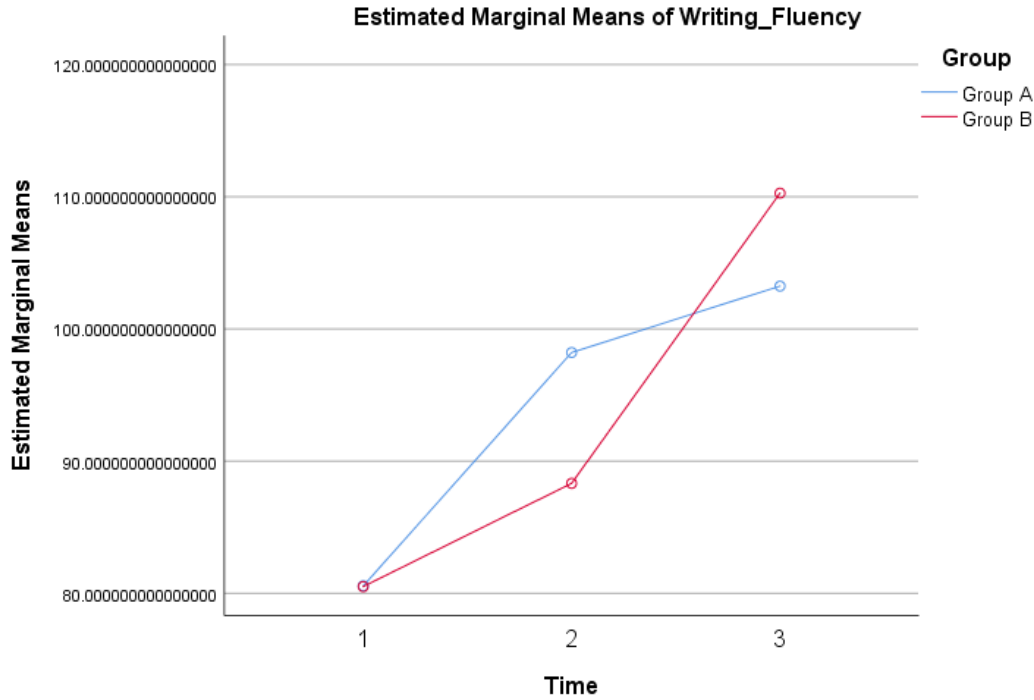
Figure 12. Estimated Marginal Means of Writing Fluency

In an attempt to answer the third research question, a correlation analysis was conducted using a Pearson Correlation Coefficient between the count of formulaic sequences in students' essays and the count of grammatical errors committed by the students in their essays as reported by the three raters. The count of formulaic sequences for students was captured for Group A in the first four-week session and for Group B for the second four-week session. This is due to the fact that Group A in the first four-week session was the experimental group and vice versa for Group B in the latter four-week session.

The formulaic sequence count had a mean of (M = 5.93, SD = 3.58), and the grammatical error had a mean of (M = 7.40, SD = 2.07) (Table 14). Among the students essays, the number of number of formulaic sequences used by students and the number of grammatical errors found in their essays were negatively correlated, $r(121) = -.185$, $p < .05$ (Table 15).

Table 14. Descriptive Statistics

	Mean	Std. Deviation	N
FS_Count	5.93	3.577	123
Grammar_Errors	7.40	2.070	123

Table 15. Correlations

		FS_Count_1	Grammar Errors
FS_Count_1	Pearson Correlation	1	-.185[*]
	Sig. (1-tailed)		.020
	N	123	123
Grammar_Errors	Pearson Correlation	-.185[*]	1
	Sig. (1-tailed)	.020	
	N	123	123

*. Correlation is significant at the 0.05 level (1-tailed).

To answer the fourth and last research question, a correlation analysis was conducted using a Pearson Correlation Coefficient between the count of formulaic sequences in students' essays and the count of formulaic sequences in their essays as reported by the three raters. The count of formulaic sequences for students was captured for Group A in the first four-week session and for Group B for the second four-week session. This is due to the fact that Group A in the first four-week session was the experimental group and vice versa for Group B in the latter four-week session.

It was found that among the students essays, the number of formulaic sequences used by students and their proficiency level as reported by their admission test scores were positively correlated, $r(121) = .267, p < .05$ (Table 15). This proved the research hypothesis that the higher the student's English proficiency level, the more formulaic sequences are used in their writing.

Table 16. Correlations

		Admission_Test	FS_Count_1
Admission_Test	Pearson Correlation	1	.267[**]
	Sig. (1-tailed)		.005
	N	93	93
FS_Count_1	Pearson Correlation	.267[**]	1
	Sig. (1-tailed)	.005	
	N	93	123

**. Correlation is significant at the 0.01 level (1-tailed).

CHAPTER Five: Discussion

In this chapter, the results and findings that were presented in chapter four will be interpreted and explained in view of the literature. Additionally, the implications of these results will be discussed, and based on that, some recommendations will also be provided. Furthermore, a section for the limitations of this study will discuss the characteristics of both the design and methodology that might have impacted or influenced the interpretation of the findings. Ideas for future research that stemmed from this study will also be highlighted.

Interpretation of Results & Findings

The results of the first question revealed that explicit instruction of formulaic sequences lead to greater use of these sequences, by word count, in Yemeni students' English essay writing. This is evidenced by the statistically significant differences that were found between the experimental and comparison groups. The experimental group demonstrated greater use of formulaic sequences, and this could be accrued to the effect of the treatment itself. These results conform with the literature where studies have shown that explicitly teaching students more formulaic sequences will increase the chances of them using and implementing them in their speech as well as writing (Boers & Lindstromberg, 2012; Henriksen, 2013; Lindstromberg, Eyckmans, & Connabeer, 2016; Peters, 2014; Peters & Pauwels, 2015; Schmitt & Carter, 2004; Barfield & Gyllstad, 2009).

Looking at the results of the first research question from another perspective, I would argue that since students retained the formulaic sequences and used them in their essay writing, it is proof enough that Sweller's (2009) theory of cognitive load worked well when making decisions as to how many formulaic sequences on average should be taught per session. This was

done so that students do not struggle to memorize and retains them. In some extreme cases, teachers tend to overload their students with vocabulary and expressions to learn, and the students end up not remembering any. Likewise, Hatami's (2015) pedagogical framework that was used to guide the instruction of formulaic sequences in this study paid dividends and proved to be productive and useful. Indeed, the teaching of formulaic sequences should not be a one-step process as suggested, but rather a three-step process, i.e. noticing, retrieving, and generating, in order to achieve the desired results (Hatami, 2015). It is important to state here that this is not the only pedagogical framework that has been proposed in the literature to teach formulaic sequences. As a matter of fact, Alali & Schmitt (2012) proposed that formulaic sequences be taught the same way as single words.

In the second question, the difference in the overall quality of students' essays as measured by raters' judgments prior to receiving explicit instruction and after receiving it was tested and the results showed that while the students showed statistically significant difference in the within-subjects effect, there were no statistically significant differences found between the experimental and comparison group. In other words, all students demonstrated statistically significant progress regardless of their group although numbers are still in favor of the experimental group in both the first and the second four-week sessions. Coupled with the results from the first research question, it is clear that the treatment had some effect, but that effect might not have been enough to be detected. Also, given that the experiment lasted merely a total of two hours, this might have hindered the effect and was not sufficient to make a difference.

In answering the third research question, results showed that there is a negative correlation between the use of formulaic sequences and the count of grammatical errors. In different words, the more formulaic sequences students use, the fewer grammatical errors they

are likely to make in their writing. So, the short and straightforward answer to the question is that there is an association between the two variables. However, this correlation is weak and that is expected because the students will not make grammatical mistakes when using the formulaic sequences but will not stop making them in other contexts. These results conform with the literature and suggest that using formulaic sequences might indeed reduce the number of grammatical errors due to the fixed structure of formulaic sequences (Staples et al., 2013; Kazemi, Katiraei, & Rasekh, 2014; AlHassan & Wood, 2015; Xu, 2016; Alali & Schmitt, 2012).

To add to the results of the previous two questions, the results of this question add more to the benefits of embedding formulaic sequences in EFL writing curriculum. Not only do formulaic sequences help students write more naturally and competently, but another added benefit of them has to do with decreasing the chance of making grammatical errors. Despite these results where formulaic sequences help EFL learners commit fewer grammatical errors, some researchers have argued that formulaic sequences impede students' creativity and innovation.

Finally, the fourth research question examined the correlation between the students' English proficiency level, as determined by their admission test, and their use of formulaic sequences. The purpose of this question was to test the hypothesis that the higher the student's English proficiency level, the more formulaic sequences are used in their writing. Results of this question revealed that there is a positive correlation between the students' English proficiency level, as determined by their admission test, and their use of formulaic sequences. However, this correlation is characterized as weak. Also, it is important to pinpoint that correlation does not imply causation. Put differently, students' proficiency level does not cause them to use more formulaic sequences, and vice versa. Such findings go in line with the literature (Alali &

Schmitt, 2012, AlHassan & Wood, 2015; Appel & Wood, 2016; Bestgen, 2017; Boers & Lindstromberg, 2012; Durrant, 2019; Granger & Bestgen, 2014; Hou, Loerts, & Verspoor, 2018; Paquot, 2017).

Implications & Recommendations

When the instructor was implementing the study, he was asked to fill out a survey (Appendix IV) to ensure a smooth and successful implementation of the treatment. Interestingly, in one of his reports, he stated that students were not aware of formulaic sequences and their importance in learning a language. This is meaningful and reason enough to start including them in the writing curriculum. Another implication of using formulaic sequences is that they are associated with fewer grammatical errors. Additionally, although no statistically significant differences were found between groups, it is clear that the experimental group always outperformed the comparison group. This, at least to the reserach, is proof enough that formulaic sequences should be included in writing curriculum in order to provide a better content for the students and improve their writing proficiency. Finally, an implication of the study is that the pedagogical approach seems to work appropriately as evidenced by the results and thus needs to be employed into practice.

In view of the results, I would highly urge and encourage EFL and ESL teachers to include formulaic sequences in their teaching. It is a fact that teachers have been almost totally ignoring the role of formulaic sequences in their teaching and should start using them. Another recommendation that stemmed from the results is that students need to be taught these formulaic sequences in a multi-step process. Traditional methods might not work if desirable results are sought.

Limitations

This study had a number of limitations that will be discussed below.

1. First and foremost, as an experimental study that aimed at making a difference in the EFL students' writing, the overall time of treatment sums up to two hours of class time only. Practically, this is not enough to implement a treatment and expect significant outcome.

2. Another limitation has to do with the fact that not all students made it to class every day during the treatment. Student presence in the classroom during the experiment is a key factor in taking part and making use of the treatment. Unfortunately, student absence was not recorded due to the large class size and how that might waste the class time.

3. This limitation is related to the previous one. Class size is about 60 students, which makes it really hard to administer and make sure that all the students took part in all the activities.

4. Since the researcher was not able to be in the study site, one would wonder as to what extent the instructor followed the instructions and whether they were followed properly.

5. The total number of formulaic sequences that were implemented in the experiment might not have been large enough to yield noticeable differences.

6. During the implementation of the study in one of the groups, students in the experimental group might have been talking to their peers in the comparison group about the content of the experiment before they were exposed to the treatment. This could not be controlled given the nature of the setting of the study.

This could limit the differences and makes it hard to capture differences, especially the social norm in Yemen is that students are very sociable and get together a lot and usually study in groups to assist each other given that English is their second language.

7. The raters were not native English speakers and their judgement on whether a piece of writing sounds natural or not might be questionable. Native speakers judgement could produce more reliable results.

Future Research

Some ideas for future research stemmed from this study and I will present some. One possible future study could be a replication of the treatment but for longer period. The current treatment time was merely two hours in total. If a new experiment could be implemented with significantly more time and a treatment better aligned with CLT, I believe more differences will be captured. Also, I would utilize native speakers as judges or at the very least a mixture of native and non-native raters.

Another interesting future study would be a study that investigates the influence of formulaic sequences in languages other than English and compare the results, i.e. comparative study. The body of literature is filled with studies in English alone, but it would be interesting to see if the same findings hold if done on other languages.

Finally, a possible study could address the effect(s) of different types of formulaic sequences. The literature has identified several types of formulaic sequences, and it would be a promising area to study and identify if certain formulaic sequences are more appropriate for certain levels of students. The literature is divided whether to teach the most frequently used

formulaic sequences or the most familiar ones. Sorting this division out would be done ideally by an experimental study.

Conclusions

This study designed an experiment that compared an approach to the teaching of writing in which formulaic language is given prominence, to a more typical approach to teaching L2 writing in which the teaching of formulaic language is downplayed and/or totally disregarded. The main purpose of this experiment was to test the hypothesis to determine whether or not including formulaic sequences in L2 writing would improve the overall quality of the students' writing as measured by the raters. Results showed that students who undertook the treatment demonstrated more use of these formulaic sequences. This increase in the use of formulaic sequences was also associated with fewer grammatical errors and higher level of English proficiency. Additionally, the results revealed that the experimental group did outperform the comparison group in both four-week sessions although this difference was not found to be statistically significant.

References

Alali, F. A., & Schmitt, N. (2012). Teaching formulaic sequences: The same as or different from teaching single words?. *Tesol Journal*, *3*(2), 153-180.

AlHassan, L., & Wood, D. (2015). The effectiveness of focused instruction of formulaic sequences in augmenting L2 learners' academic writing skills: A quantitative research study. *Journal of English for Academic Purposes*, *17*, 51-62.

Appel, R., & Wood, D. (2016). Recurrent word combinations in EAP test-taker writing: Differences between high-and low-proficiency levels. *Language Assessment Quarterly*, *13*(1), 55-71.

Barfield, A., & Gyllstad, H. (2009). *Researching collocations in another language: Multiple interpretations*. Springer.

Bestgen, Y., & Granger, S. (2014). Quantifying the development of phraseological competence in L2 English writing: An automated approach. *Journal of Second Language Writing*, *26*, 28-41.

Boers, F., & Lindstromberg, S. (2012). Experimental and intervention studies on formulaic sequences in a second language. *Annual Review of Applied Linguistics*, *32*, 83-110.

Boers, F., & Lindstromberg, S. (2012). Experimental and intervention studies on formulaic sequences in a second language. *Annual Review of Applied Linguistics*, *32*, 83-110.

Boers, F., Eyckmans, J., Kappel, J., Stengers, H., & Demecheleer, M. (2006). Formulaic sequences and perceived oral proficiency: Putting a lexical approach to the test. *Language teaching research*, *10*(3), 245-261.

Conklin, K, & Schmitt, N. (2012). The processing of formulaic language. Annual Review of

    Applied Linguistics, 32, 45-61. http://dx.doi.org/10.1017/S0267190512000074

Crossley, S., Cai, Z., & McNamara, D. S. (2012, May). Syntagmatic, paradigmatic, and

    automatic n-gram approaches to assessing essay quality. In *Twenty-Fifth International*

    FLAIRS Conference.

Dai, Z., & Ding, Y. (2010). Effectiveness of text memorization in EFL learning of Chinese

    students. *Perspectives on formulaic language: Acquisition and communication*, 71-87.

Ding, Y. (2007). Text memorization and imitation: The practices of successful Chinese learners

    of English. *System*, *35*(2), 271-280.

Dornyei, Z. (2009). The psychology of second language acquisition. Oxford, England: Oxford

    University Press.

Durrant, P. (2019). Formulaic language in English for Academic Purposes. In Siyanova-

    Chanturia, A., & Pellicer-Sanchez, A. (Eds.), *Understanding Formulaic Language: A*

    Second Language Acquisition Perspective (pp. 211-227). New York, NY: Routledge.

Ellis, N. C., Simpson-Vlach, R. I. T. A., & Maynard, C. (2008). Formulaic language in native

    and second language speakers: Psycholinguistics, corpus linguistics, and TESOL. *Tesol*

    Quarterly, *42*(3), 375-396.

Eyckmans, J., Boers, F., & Lindstromberg, S. (2016). The impact of imposing processing

    strategies on L2 learners' deliberate study of lexical phrases. *System*, *56*, 127-139.

Fareed, M., Ashraf, A., & Bilal, M. (2016). ESL learners' writing skills: Problems, factors and

    suggestions. *Journal of Education and Social Sciences*, *4*(2), 81-92.

George, D., & Mallery, M. (2010). SPSS for Windows Step by Step: A Simple Guide and

    Reference, 17.0 update (10a ed.) Boston: Pearson.

Granger, S., & Bestgen, Y. (2014). The use of collocations by intermediate vs. advanced non-native writers: A bigram-based study. *International Review of Applied Linguistics in Language Teaching*, *52*(3), 229-252.

Hadley, A. O., & Reiken, E. (1993). *Teaching Language in Context, and Teaching Language in Context--Workbook*. Heinle & Heinle Publishers, International Thomson Publishing Book Distribution Center, 7625 Empire Drive, Florence, KY 41042.

Hatami, S. (2015). Teaching formulaic sequences in the ESL classroom. TESOL Journal, 6(1), 112-129.

Henriksen, B. (2013). Research on L2 learners' collocational competence and development–a progress report. *C. Bardel, C. Lindqvist, & B. Laufer (Eds.) L*, *2*, 29-56.

Hou, J., Loerts, H., & Verspoor, M. H. (2018). Chunk use and development in advanced Chinese L2 learners of English. *Language Teaching Research*, *22*(2), 148-168.

Hyland, F. (2016). Challenges faced by second language doctoral student writers in Hong Kong and their writing strategies. *Australian Review of Applied Linguistics*, *39*(2), 158-180.

Kazemi, M., Katiraei, S., & Rasekh, A. E. (2014). The impact of teaching lexical bundles on improving Iranian EFL students' writing skill. *Procedia-Social and Behavioral Sciences*, *98*, 864-869.

Kim, C., Mendenhall, A., & Johnson, T. E. (2010). A design framework for an online English writing course. In *Learning and instruction in the digital age* (pp. 345-360). Springer, Boston, MA.

Kim, Y. S. G., & Schatschneider, C. (2017). Expanding the developmental models of writing: A direct and indirect effects model of developmental writing (DIEW). *Journal of educational psychology*, *109*(1), 35.

Leki, I. (2017). *Undergraduates in a second language: Challenges and complexities of academic literacy development*. Routledge.

Li, J., & Schmitt, N. (2010). The development of collocation use in academic texts by advanced L2 learners: A multiple case study approach. *Perspectives on formulaic language: Acquisition and communication*, 22-46.

Lindstromberg, S., Eyckmans, J., & Connabeer, R. (2016). A modified dictogloss for helping learners remember L2 academic English formulaic sequences for use in later writing. *English for specific purposes*, *41*, 12-21.

Lyons, John (1991). *Natural Language and Universal Grammar*. New York: Cambridge University Press. pp. 68–70. ISBN 978-0521246965.

Martinez, R., & Schmitt, N. (2012). A phrasal expressions list. *Applied linguistics*, *33*(3), 299-320.

Mayer, R. E. (2009). Cognitive theory of multimedia learning. In R. E. Mayer,The CambridgeHandbook of Multimedia Learning(pp. 31–48). New York, NY: Cambridge University Press.(https://www.cambridge.org/core/services/aop-cambridge-core/content/view/A49922ACB5BC6A37DDCCE4131AC217E5/9780511816819c3_p31-48_CBO.pdf/cognitive_theory_of_multimedia_learning.pdf)

Mayer, R. E. (2011). *Applying the science of learning*: Pearson/Allyn & Bacon Boston, MA.

McMillan, J. H., & Schumacher, S. (2010). Research in Education: Evidence-Based Inquiry, MyEducationLab Series. *Pearson*.

Moses, R. N., & Mohamad, M. (2019). Challenges Faced by Students and Teachers on Writing Skills in ESL Contexts: A Literature.

Myles, J. (2002). Second language writing and research: The writing process and error analysis

    in student texts. *Tesl-Ej*, *6*(2), 1-20.

Myles, J. (2002). Second language writing and research: The writing process and error analysis

    in student texts. Tesl-Ej, 6(2), 1-20.

Nunan, D. (1989). *Designing tasks for the communicative classroom*. Cambridge University

    Press.

Paas, F., Renkl, A., & Sweller, J. (2004). Cognitive load theory: Instructional implications of the

    interaction between information structures and cognitive architecture. *Instructional*

    science, 32(1-2), 1-8.

Pappas, C. (2014). Cognitive Load Theory and Instructional Design. Retrieved from:

    https://elearningindustry.com/cognitive-load-theory-and-instructional-design

Peters, E. (2014). The effects of repetition and time of post-test administration on EFL learners'

    form recall of single words and collocations. *Language Teaching Research*, *18*(1), 75-94.

Peters, E., & Pauwels, P. (2015). Learning academic formulaic sequences. *Journal of English for*

    academic purposes, *20*, 28-39.

Prabhu, N. S. (1990). There is no best method – why? *TESOL Quarterly, 24*, 161–176.

Razi, S. (2015). Development of a rubric to assess academic writing incorporating plagiarism

    detectors. *SAGE Open*, *5*(2), 1-13. DOI: 10.1177/2158244015590162.

Richards, J. C. (2005). *Communicative language teaching today* (pp. 22-26). Singapore:

    SEAMEO Regional Language Centre.

Schmitt, N. (2008). Instructed second language vocabulary learning. *Language teaching*

    research, *12*(3), 329-363.

Schmitt, N. (2010). *Researching vocabulary: A vocabulary research manual*. Springer.

Schmitt, N., & Carter, R. (2004). Formulaic sequences in action: an introduction. Dlm. N.

Schmitt. *Formulaic sequences acquisition*.

Shrout, P., & Fleiss, J. (1979). Intraclass correlations: Uses in assessing rater reliability.

Psychological Bulletin, 86 (2), 420-428 DOI: 10.1037/0033-2909.86.2.420

Siyanova-Chanturia, A., & Pellicer-Sanchez, A. (Eds.). (2019). *Understanding formulaic*

language: A second language acquisition perspective. Routledge.

Siyanova-Chanturia, A., & Sidtis, D. V. L. (2019). What online processing tells us about

formulaic language. In Siyanova-Chanturia, A., & Pellicer-Sanchez, A. (Eds.),

Understanding Formulaic Language: A Second Language Acquisition Perspective (pp.

38-61)*. New York, NY: Routledge.

Staples, S., Egbert, J., Biber, D., & McClair, A. (2013). Formulaic sequences and EAP writing

development: Lexical bundles in the TOEFL iBT writing section. *Journal of English for*

academic purposes, *12*(3), 214-225.

Stengers, H., Boers, F., Housen, A., & Eyckmans, J. (2011). Formulaic sequences and L2 oral

proficiency: Does the type of target language influence the association?. *IRAL-*

International Review of Applied Linguistics in Language Teaching, *49*(4), 321-343.

Sweller, J. (2009). Implications of cognitive load theory for multimedia learning. In R.

E.Mayer,The Cambridge Handbook of Multimedia Learning(pp. 19–30). New York, NY:

Cam-bridge University Press. (Available from

https://www.cambridge.org/core/services/aop-cambridge-

core/content/view/F5F9582CB12C6781FA9C61F6B459D7FC/9780511816819c2_p19-

30_CBO.pdf/implications_of_cognitive_load_theory_for_multimedia_learning.pdf)

Wood, D. (2006). Uses and functions of formulaic sequences in second language speech: An

    exploration of the foundations of fluency. *Canadian Modern Language Review*, *63*(1),

    13-33.

Wray, A. (2002). *Formulaic language and the lexicon*. Cambridge: Cambridge University Press.

Wray, A. (2017). Formulaic sequences as a regulatory mechanism for cognitive perturbations

    during the achievement of social goals. *Topics in cognitive science*, *9*(3), 569-587.

Xu, Q. (2016). Formulaic Sequences and the Implications for Second Language Learning.

    English Language Teaching, *9*(8), 39-45.

Xue, L. (2019, May). Implementation of Communicative Teaching Approach in College English

    Teaching. In *2019 4th International Conference on Social Sciences and Economic

    Development (ICSSED 2019)*. Atlantis Press.

Youn-Hee, K. (2019). An Investigation into the Dimensional Structure of ESL Academic

    Writing Skills on TOEFL iBT Independent Essays. *Journal of Asia TEFL*, *16*(1), 307.

Appendix (I): Formulaic Sequences List

Session One:

Phrase	Example 1	Dictionary Definition	Example 2
1. THOSE WHO	He would defend **those who** had no voice.	people who	There are **those who** disapprove of all forms of gambling.
2. AS TO	There was some confusion **as to** its whereabouts.	About, concerning, regarding, with respect to	I'm in a quandary **as to** how to deal with the problem.
3. SEEK TO	The new board **sought to** find alternative solutions.	to try to do something	The law must **seek to** protect the democratic rights of citizens.
4. CONSIST OF	What does it **consist of**?	Be composed or made up of	The exhibition **consists of** 180 drawings.
5. FOLLOWED BY	The workshop will be **followed by** time for questions.	Have sth after another or others	Turkey was **followed by** dessert.
6. ACCOUNT FOR	They'll need to **account for** their actions.	Provide or serve as a satisfactory explanation or reason for	He was brought before the Board to **account for** his behavior.
7. CONCERNED WITH	They spoke on issues **concerned with** culture.	having to do with, about	The memo is chiefly **concerned with** hiring policies.
8. OUT OF	In terms of color, three **out of** five were silver.	used as a function word to indicate choice or selection from a group	One **out of** four survived the crash.

Formulaic Sequences List

Session Two:

Phrase	Example 1	Dictionary Definition	Example 2
1. IN PRACTICE	There was nothing she could do **in practice**.	used to say what is actually done or what the actual effect or result of something is	The software is designed to block pornographic websites, but **in practice**, it blocks many other sites as well.
2. ON THE BASIS (OF)	She came **on the basis** that it would help her.	according to, based on	Students were chosen **on the basis of** their grades and test scores.
3. AIM TO	They **aim to** complete the project by the spring.	aspire, intend	She **aims to** win.
4. MAKE UP ('COMPRISE')	Hispanics **make up** a large part of the population.	constitute, compose	Ten chapters **make up** this volume.
5. ENTITLED TO	You're **entitled to** your opinion.	to furnish with proper grounds for seeking or claiming something	You are **entitled** to know of anything that threatens you.
6. PRIOR TO	**Prior to** the event, the organizers called the band.	in advance of, before	Make sure all revisions are approved by the author **prior to** publication.
7. KNOWN TO	He's **known to** be like that.	famous for	Smoking is **known to** cause cancer.
8. IN THE EVENT	**In the event** you change your mind, let me know.	a postulated outcome, condition, or eventuality	**In the event** that I am not there, call the house.

Formulaic Sequences List

Session Three:

Phrase	Example 1	Dictionary Definition	Example 2
1. TAKE INTO ACCOUNT	You must also **take into account** the rush hour.	To consider or regard; to include (as in an estimate or plan) or pay attention to; to notice; to allow for	His plan did not **take into account** the possibility of rain.
2. IRRESPECTIVE OF	Child benefit is paid **irrespective of** income levels.	not taking (something) into account; regardless of	We consider all qualified job applicants, **irrespective of** sex or age.
3. AT PRESENT	There's nothing to do **at present**.	at or during this time; now	Membership **at present** stands at about 5,000
4. WHETHER OR NOT	It depends on **whether or not** he comes on time.	used for saying that it is not important which of two possibilities is true or possible	**Whether** he wants to **or not**, he'll have to clean his room.
5. IN PLACE	There are systems **in place** to handle that.	Established; instituted; or operational	The plans are **in place**.
6. IN SPITE OF	**In spite of** all the work there were few alterations.	in defiance or contempt of; without being prevented by	They succeeded **in spite of** their opposition.
7. IN PART	It is **in part** the reason people come here.	in some degree; partially	The accidents were due **in part** to the bad weather.
8. (WITH) REGARD TO	There was some confusion **with regard to** payment.	concerning; with respect to	He made inquiries **with regard to** Beth.

Formulaic Sequences List

Session Four:

Phrase	Example 1	Dictionary Definition	Example 2
1. THE ABOVE	**The above** only underscores strength of the data.	something that is mentioned at an earlier point in the same document	If any of **the above** is incorrect, please let me know. ; Contact any of **the above** for more information.
2. TO DATE	**To date** there have been over nine instances.	up to the present moment	That was her best album **to date**.
3. IN THE COURSE OF	**In the course of** the discussion the manager left.	during the specified period	He was a friend to many people **in the course of** his life.
4. AIMED AT	The study is **aimed at** exploring how people use it.	to direct toward a specified object or goal	The book is **aimed at** people with no specialized knowledge.
5. TAKE PART IN	It's something we all wanted to **take part in**.	to be involved in an activity with other people	They will be **taking part in** the discussions, along with many other organizations.
6. AS SUCH	The film was not a horror **as such**.	used after a noun when you are referring to the usual meaning of the word	She's not really a maid **as such**; she just helps out in the house sometimes.
7. IN CONTRAST (TO)	The inside was amazing **in contrast**.	used when you are comparing two things or people and saying that the second one is very different from the first	**In contrast to** his predecessor, Bush has little appetite for foreign travel.
8. ON THE PART OF	There are no barriers **on the part of** the government.	used to ascribe responsibility for something to someone	There was a series of errors **on my part**.

Formulaic Sequences List

Session Five:

Phrase	Example	Dictionary Definition	Example
1. SHORT OF	**Short of** calling the doctor, I don't know what to do.	without going so far as (some extreme action)	**Short of** putting out an all-persons alert, there's little else we can do
2. PROVE TO BE	The bicycle **proved to be** of immense value.	to establish the existence, truth, or validity of (as by evidence or logic)	Though there are alternatives to detention that have **proven to be** successful and cost-effective, the Trump administration is focused primarily on locking migrants up.
3. THE FORMER - THE LATTER	**The former** can require much more money, while **the latter** is reasonably priced.	Two things or people that have been mentioned – the former refers to the first one while the latter refers to the second one	Of these two options, **the former** is less effective, while **the latter** is less risky.
4. IN LIGHT OF	**In light of** the results, we delayed the study.	because of a particular fact; considering	**In light of** your good driving record, we've decided to overlook this offense
5. DO(ING) SO	Unfortunately, **doing so** also meant facing traffic.	doing something already mentioned	But I am not now abstaining from **doing so** at the first moment when I asked the question.
6. THE MEANS	He hasn't **the means** to get there.	resources available for disposal especially material resources affording a secure life	She taught it to Laura, and from that time on the manual alphabet was **the means** of communicating with her.
7. GIVE RISE TO	The protests **gave rise to** new violence.	to be the cause or source of; produce	Delays could **give rise to** further problems.
8. LARGE SCALE	They were thinking on a **large scale**.	involving many people or things; extensive	Their equipment is suitable for **large-scale** production.

Formulaic Sequences List

Session Six:

Phrase	Example	Dictionary Definition	Example
1. BY MEANS OF	It was possible to achieve **by means of** coercion.	through the use of; with the help or agency of	Supplying water to cities **by means of** aqueducts is cost effective.
2. THAT WHICH	You cannot undo **that which** has already been done.	*that* is a pronoun referring back to a noun phrase and the *which* is the relative pronoun used for non-animate antecedents	A very small part of acting is **that which** takes place on the stage!
3. IN THE FACE OF	They quit **in the face of** the media scrutiny.	in a situation where you have to deal with something unpleasant or difficult	They won **in the face of** stiff competition from all over the country.
4. SUCH THAT	It can be developed **such that** it does not interfere.	to the extent that	The linking of sentences **such that** they constitute a narrative is an art in itself.
5. IN PRINCIPLE	You can **in principle**.	used for saying that something is possible in theory, although it has not yet been tried	**In principle**, the banks are entitled to withdraw these loans when necessary.
6. AS YET	I'm not convinced **as yet**.	until now or a particular time in the past	The damage is **as yet** undetermined.
7. AT RISK	There's no reason to put passers by **at risk**.	exposed to harm or danger	23 million people in Africa are **at risk** of starvation
8. A MERE	She made **a mere** penny per shirt.	used for emphasizing that something is small or unimportant	I've lost **a mere** two pounds.

Formulaic Sequences List

Phrase	Example	Dictionary Definition	Example
1. WITH RESPECT TO	She had nothing to add **with respect to** the report.	as regards; with reference to	The two groups were similar **with respect to** age, sex, and diagnoses.
2. IN CONJUNCTION WITH	The police**, in conjunction with** the fire department, managed to keep the crowd under control.	combined with	This diet will only work **in conjunction with** regular exercise.
3. LITTLE MORE THAN	It's **little more than** pageantry if you ask me.	used for emphasizing that someone or something is not at all important or impressive	The ancient canal is now **little more than** a muddy ditch.
4. IN NEED	We want to help children **in need**.	not having enough food, money, clothing, or other things that are necessary for life	We try to help those most **in need**.
5. IN THIS RESPECT	**In this respect**, our study refutes earlier research.	in connection with the point previously mentioned	There was little incentive for them to be active **in this respect**.
6. PROVIDED THAT	It's OK **provided that** he come up with the goods.	only if a particular thing happens or is done	You can go out to play **provided that** you finish your homework first.
7. ALLOW FOR	Even if you **allow for** inflation, the price increase still seems exorbitant.	to consider something when making a plan or calculation	The survey does not **allow for** the fact that some students are attending part-time.
8. AT THE EXPENSE OF	They were laughing **at the expense of** the photo.	if one thing exists or happens at the expense of another; the second thing suffers or is not done well because of the first	Military strength is often achieved **at the expense** of a country's economic health.

Formulaic Sequences List

Session Eight:

Phrase	Example	Dictionary Definition	Example
1. FREE FROM	I dream of a life **free from** stress.	lacking; without	It would be nice to be **free from** the shadow of her mother's overweening ambition.
2. UNDER WAY	Changes are already **under way**.	has begun and is now taking place	The court case got **under way** last autumn.
3. A DEGREE OF	There is **a degree of** irony in the story.	If something has a degree of a particular quality, it has a small but significant amount of that quality.	Their wages, however, allow them **a degree** of independence.
4. WEALTH OF	The library holds a **wealth of** knowledge.	If you say that someone or something has a wealth of good qualities or things, you are emphasizing that they have a very large number or amount of them.	He has such a **wealth of** creative expertise.
5. AT WORK	There were strange forces **at work**.	If a force or process is at work, it is having a particular influence or effect.	It is important to understand the powerful economic and social forces **at work** behind our own actions.

FS - Session 1

Label	
OUT OF ('IN'/'FROM')	
CONCERNED WITH	
ACCOUNT FOR	
FOLLOWED BY	
CONSIST OF	
SEEK TO	
AS TO	
THOSE WHO	

Axis: - 2,000 4,000 6,000 8,000 10,000 12,000 14,000 16,000

■ Frequency

FS - Session 2

Label	
IN THE EVENT (OF)	
KNOWN TO	
PRIOR TO	
ENTITLED TO	
MAKE UP ('COMPRISE')	
AIM TO	
ON THE BASIS (OF)	
IN PRACTICE	

Axis: - 500 1,000 1,500 2,000 2,500 3,000 3,500 4,000

■ Frequency

FS - Session 3

Label	
(WITH) REGARD TO	
IN PART	
IN SPITE OF	
IN PLACE	
WHETHER OR NOT	
AT PRESENT	
IN RESPECT OF	
TAKE INTO ACCOUNT	

Axis: 2,400 2,500 2,600 2,700 2,800 2,900 3,000

■ Frequency

FS - Session 4

Label	
ON THE PART OF	
IN CONTRAST (TO)	
AS SUCH	
TAKE PART IN	
AIMED AT	
IN THE COURSE OF	
TO DATE	
THE ABOVE	

Axis: - 500 1,000 1,500 2,000 2,500 3,000

■ Frequency

FS - Session 5

Formula	Frequency
LARGE SCALE	
GIVE RISE TO	
THE MEANS	
DO(ING) SO	
IN LIGHT OF	
THE FORMER (THE LATTER)	
PROVE TO BE	
SHORT OF	

X-axis: - , 500, 1,000, 1,500, 2,000, 2,500
Legend: ■ Frequency

FS - Session 6

Formula	Frequency
A MERE	
AT RISK	
AS YET	
IN PRINCIPLE	
SUCH THAT	
IN THE FACE OF	
THAT WHICH	
BY MEANS OF	

X-axis: 1,300, 1,350, 1,400, 1,450, 1,500, 1,550, 1,600, 1,650
Legend: ■ Frequency

FS - Session 7

Formula	Frequency
AT THE EXPENSE OF	
ALLOW FOR ('CALCULATE IN')	
PROVIDED THAT	
IN THIS RESPECT	
IN NEED	
LITTLE MORE THAN	
IN CONJUNCTION WITH	
WITH RESPECT TO	

X-axis: - , 200, 400, 600, 800, 1,000, 1,200, 1,400
Legend: ■ Frequency

FS - Session 8

Formula	Frequency
AT WORK	
WEALTH OF	
A DEGREE OF	
UNDER WAY	
FREE FROM	

X-axis: - , 200, 400, 600, 800, 1,000, 1,200
Legend: ■ Frequency

Appendix (II): Transparent Academic Writing Rubric (TAWR)

English Writing – Test Rubric

Name: Group: ID Number:

Date: Rater Name:

Penalties		Final score *(40-item total – penalties)*
Length (word count = ...)	= .... *points*	…………………points
Overused quotations (quote ratio = ...%)	= .... *points*	
Natural Writing (Foreign expressions= …………)	= .... *points*	**Items total score**
Penalty total	= .... *points*	………………… points

	Evaluation criteria	Point(s)			
		Poor	**Acceptable**	**Good**	**Excellent**
	INTRODUCTION				
1	Topic selection	0	1	2	3
2	Narrowing down the topic	0	1	2	3
3	Title of the paper	0	1	2	3
4	Headings and subheadings	0	1	2	3
5	Abstract	0	1	2	3
6	Key words	0	1	2	3
7	Introduction to the topic	0	1	2	3
8	Mentioning the aims in the introduction	0	1	2	3
	ACADEMIC WRITING				
9	Focusing on the issue (omitting personal pronouns)	0	1	2	3
10	Appropriate use of abbreviations	0	1	2	3
11	Avoiding contractions (e.g. don't)	0	1	2	3

12	Avoiding extremeness (e.g., use of must)	0	1	2	3
13	Avoiding slang, jargon and clichés	0	1	2	3
14	Use of words with precise meaning	0	1	2	3
15	Use of objective language	0	1	2	3
16	Balanced use of passive forms	0	1	2	3
IDEA PRESENTATION					
17	Appropriate use of markers (e.g., firstly)	0	1	2	3
18	Appropriate use of linking devices (e.g., however)	0	1	2	3
19	Flow of ideas	0	1	2	3
20	Paragraph unity	0	1	2	3
21	Overall unity	0	1	2	3
22	Paragraph coherence	0	1	2	3
23	Overall coherence	0	1	2	3
24	Appropriate length of paragraphs	0	1	2	3
25	Complexity of the sentences	0	1	2	3
26	Relevance of conclusions with the discussion	0	1	2	3
27	Drawing effective conclusions	0	1	2	3
MECHANICS					
28	Paper format	0	1	2	3
29	Grammar	0	1	2	3
30	Spelling	0	1	2	3
31	Punctuation	0	1	2	3
32	Vocabulary selection	0	1	2	3
33	Use of tables and figures	0	1	2	3
34	Length of the paper	0	1	2	3
NATURAL WRITING					
35	Writing has the feel of a native speaker.	0	1	2	3
36	Easy to read and process	0	1	2	3
37	Absence of foreign/unnatural expressions	0	1	2	3

38	Formulaic sequences were used adequately.	0	1	2	3
39	No formulaic sequences were overused.	0	1	2	3
40	Formulaic sequences were used in the right context.	0	1	2	3

Additional comments:

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Appendix (III): Teacher Instruction on the Use of Research Materials

Study Protocol and instructions:

1. This intervention is to be implemented to level-II students during their writing class.

2. The study will last for 8 weeks.

    a. At the beginning, all students in both groups will be asked to write a 30-minute narrative essay. These are hand-written essays Essay prompts are provided at the end of this document.

    b. For the first four weeks, students in **Group A ONLY** will be taught a set of expressions at the end of every class session. A fifteen-minute time slot is to be allocated for this activity. Lists of expressions for every session are attached with this document.

        i. Group B, during these four weeks, will not receive any extra instruction and should not be made aware of the content taught to group A.

    c. By the end of the fourth week, all students will be asked to write a 30-minute narrative essay. Essay prompts are provided at the end of this document.

    d. Starting from the fourth week to the end of the eighth week, things will get back to normal for Group A, and now **ONLY Group B** will be taught the same set of expressions at the end of every class session. A fifteen-minute time slot is to be allocated for this activity. Lists of expressions are attached with this document; these are the same lists of expressions taught to Group A.

    e. At the end of the eighth week, all students will be asked to write a 30-minute narrative essay. Essay prompts are provided at the end of this document.

3. The teacher will fill out a brief online survey at the end of every week to follow up with the progress of the study. Survey cab be accessed here:

   a. https://kusurvey.ca1.qualtrics.com/jfe/form/SV_1QVYGZkfXeZd4R7

Study Calendar							
		Monday	**Tuesday**	**Thursday**		**Monday**	**Tuesday**	**Thursday**
Week 1	**Group A**	**30-minute essays (1)** Exp. – List 1 Oct. 21st		Exp. – List 2 Oct. 24th	**Week 5**	**30-minute essays (2)** No Treatment	No Treatment	No Treatment
	Group B	**30-minute essays (1)** No Treatment	No Treatment	No Treatment		**30-minute essays (2)** Exp. – List 1 Nov. 18st	Exp. – List 2 Nov. 19th	
Week 2	**Group A**	Exp. – List 3 Oct. 28th		Exp. – List 4 Oct. 31st	**Week 6**	No Treatment	No Treatment	No Treatment
	Group B	No Treatment	No Treatment	No Treatment		Exp. – List 1 Nov. 25st	Exp. – List 2 Nov. 26th	
Week 3	**Group A**	Exp. – List 5 Nov. 04th		Exp. – List 6 Nov. 07st	**Week 7**	No Treatment	No Treatment	No Treatment
	Group B	No Treatment	No Treatment	No Treatment		Exp. – List 1 Dec. 02nd	Exp. – List 2 Dec. 03rd	
Week 4	**Group A**	Exp. – List 7 Nov. 11th		Exp. – List 8 Nov. 14st	**Week 8**	No Treatment	No Treatment	**30-minute essays (3)** No Treatment
	Group B	No Treatment	No Treatment	No Treatment		Exp. – List 1 Dec. 09st	Exp. – List 2 Dec. 10th	**30-minute essays (3)**

Pedagogical Approach

Teaching these lists of expressions should be done using this pedagogical approach:

a. Noticing

    i. Explain to the students that native speakers do not only use single words in their speaking and writing. In fact, studies of corpus linguistics have shown that the language repertoire of a native speaker consists of approximately 50% of multi-word expressions. Therefore, in order to demonstrate good command of the language and proficient written fluency, one must implement these expressions in their writing as much as possible.

    ii. Remember, do not overuse some of these expressions, but rather use a variety of them.

    iii. Make sure you use these expressions in their right context- pragmatics.

    iv. Remember that these expressions are fixed.

b. Retrieving

    a. The second step is retrieving where students are presented with chances to actively and repeatedly retrieve the targeted formulaic sequences from their memory either in a receptive or productive manner. For example, after explicitly teaching a number of formulaic sequences, the teacher would provide the students with a discourse completion task where a passage has some blanks that to be filled with formulaic sequences that they have learned. This would allow the students to think back and retrieve them form their memory. The more retrieval that happens, the

stronger the schemas are created in the long-term memory and therefore the more accessible these formulaic sequences are to the students.

c. <u>Generating</u>

   a. Finally, the students need to use formulaic sequences in different contexts they originally learned them in; this is called generating. After the students have learned the targeted formulaic sequences and repeatedly retrieved them back and forth from their memory, it is essential that they start using them in their writing. This could be achieved through several ways. One possible class activity is to choose a number of formulaic sequences and ask the students to create a sentence around them. Another potential example is to ask the students to write a short essay implementing at least 20 formulaic sequences they had learned in class. This way, the teacher would make sure that the students learned the targeted formulaic sequences and are able to use them properly in the right context.

Appendix (IV): Weekly Teacher Follow-up Survey

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1. I was able to teach the designated FSs in the given time.					
2. I helped the students realize the importance of FSs.					
3. I was able to go through the pedagogical framework (noticing, retrieving, and generating) without a problem.					
4. I did NOT have an issue explaining the FSs to the students.					
5. I was able to review the previously learned FSs with the students.					
6. I used a variety of activities teaching FSs.					
7. The students seemed to understand the meaning of the FSs.					
8. The students mostly recall the FSs from the previous class meeting.					
9. The students seemed to be able to use the FSs in their own sentences.					
10. The students responded positively to the material and seemed to comprehend it.					
11. The students were engaged in the activities.					
12. The students submitted their homework (5 sentences for each FS they learned).					
Comments:					

Appendix (V): Essay Writing Prompts

	Option A	Option B
Pre-test	Write an essay describing your favorite Eid vacation. Where did you go? What did you do? Who did you go with? Your essay should contain a minimum of three paragraphs: introduction, body, and conclusion.	If you were able to travel to five places around the world. What are these places? What would you do? Who would you take with you? Write an essay that contain a minimum of three paragraphs: introduction, body, and conclusion.
First post-test	Write an essay describing your home country and why people should visit it. For example, you could talk about its history, tourist destinations, famous figures, culture and traditions, etc. Your essay should contain a minimum of three paragraphs: introduction, body, and conclusion.	Write an essay describing what you would do if you won a 5-million-dollar prize. What is in you bucket list? What are the things you would do to change your life and that of the people around you? Your essay should contain a minimum of three paragraphs: introduction, body, and conclusion.
Second post-test	Write an essay about a memorable experience with a favorite family member. What happened? How did it make you feel? Your essay should contain at least three paragraphs: introduction, body, and conclusion.	If you were the president of Yemen for five days only. What would you do? What would you change? Write an essay that contain a minimum of three paragraphs: introduction, body, and conclusion.

Appendix (VI): Permission to Conduct the Study

Republic Of Yemen

Sana'a University
Faculty of Arts

*Department of English Language
and Literature*

بسم الله الرحمن الرحيم

الجمهورية اليمنية

جامعة صنعاء

كلية الآداب

قسم اللغة الانجليزية وآدابها

Date : _____

No. _____

التاريخ _____
الرقم _____

Subject: Permission to conduct a study

Date: September 29, 2019

To whom it may concern,

This is to inform you that The English Department gives Mr. Abdulrazzag M. Falah permission to conduct his study entitled "Using formulaic sequences in improving EFL students' written fluency" here in our department. Department personnel are willing to assist and provide any kind of help or information necessary to ensure successful implementation of the study. The study will take place in our second-year writing class, and all students will be encouraged to participate in the study. As explained by Mr. Falah, the study will last for eight weeks, and three in-class essays will be collected from the participants in three different occasions.

If you have any other concerns, feel free to contact the chair of the department, Dr. Ahmed Albakeri.

Thank you,

Dr. Ahmed Albakeri
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