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DIVISION OF ENGLISH



**Investigating the Effectiveness of Thesaurus-
Assisted Writing in Improving Algerian EFL
Learners' Synonymy Use as a Measure of Lexical
Cohesion in Academic Writing:**

The Case of Master One Students of English at Mohamed Khider University of Biskra

Thesis submitted to the Department of Letters and Foreign languages in partial fulfilment of the requirements for the Degree of **Master in Sciences of Language**

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Declaration

I, Aimen **KEBSA**, hereby declare that this dissertation presented for the purpose of obtaining a Master's degree in Sciences of Language is the product of my own efforts, and therefore all the contents of this dissertation is original except where references are made. I additionally certify that this work has not been submitted in any university or institution in order to obtain a degree or qualification.

This research work was conducted and completed at Mohamed Khider University of Biskra, Algeria.

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Date:

Dedication

In memoriam of my friend Abdelmajid **DOUAL** (1996-2015). I would like to dedicate this work to his memory. Abdelmajid was an excellent classmate. Together, we always dreamed of becoming great teachers of English. However, he could not make it, and left us very suddenly on July 1st, 2015. In the honor of his innocent soul, I want to dedicate this work. I miss him, and I remember him very roundly.

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"[...] O my Lord! so order me that I may be grateful for Thy favor's, which thou hast bestowed on me and on my parents, and that I may work the righteousness that will please Thee: And admit me, by Thy Grace, to the ranks of Thy righteous Servants."

[The Qur'an, 27:19].

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Abstract

This study aimed to examine the effectiveness of Thesaurus-Assisted Writing (Power Thesaurus in this case study) in improving Algerian EFL learners' synonymy use as a measure of lexical cohesion in academic essays. In response to the issue of synonymy use in establishing lexical cohesion of writing, and encouraged by a pragmatist orientation, a mixed-methods approach with a convergent parallel (static-group comparison) design were employed. The sample comprised 16 Master one students of Language Sciences who were recruited following the voluntary sampling approach. Data was elicited by means of a written test of synonymy knowledge and use and an online questionnaire. It was subsequently analyzed quantitatively using IBM-SPSS 22 for the statistical analyses and AntcConc 4.2.4 for a corpus analysis. Additionally, a Systemic Functional Linguistics framework was followed to qualitatively analyze the textual metafunction of the written essays. Results from the Mann Whitney U test revealed that there is a statistically significant difference between the number of synonyms used by the two groups in the test, with a significance level of ($p = .010$). The SFL-based discourse analysis revealed that the participants' use of marked and unmarked themes in the essays yielded valuable insights into their language development, rhetorical awareness, and discourse organization skills. It was also found that the participants used the three types of themes, with (1) Topical themes being used the most, (2) Textual themes next, and (3) Interpersonal themes used the least. Within the same clauses occurred the targeted synonyms. Findings from the discourse analysis also indicated that while the participants from the Experimental Group used effectively the targeted synonyms to establish texture, others from the Control Group did not use, or misused, these synonyms often. Based on these findings, a host of pedagogical implications and recommendations were drawn.

Key words: Academic writing, electronic thesaurus dictionary, lexical cohesion, synonymy, systemic functional linguistics, textual metafunctions.

List of acronyms

EFL: English as a Foreign Language

ELT: English Language Teaching

ICT: Information and Communication Technology

APA: American Psychological Association

EG: Experimental Group

CG: Control Group

MKUB: Mohamed Khider University, Biskra

SLA: Second Language Acquisition

SLW: Second Language Writing

CALL: Computer-Assisted Language Learning

MALL: Mobile-Assisted Language Learning

CAW: Computer-Assisted Writing

EDs: Electronic Dictionaries

ETD: Electronic Thesaurus Dictionary

SFL: Systemic Functional Linguistics

TM: Textual metafunction

AVL: Academic Vocabulary List

PAVIs: Predetermined Academic Vocabulary Items

AKA: Also Known As

List of tables

Table 1 <i>Important landmarks in the history of research on L2 writing</i>	35
Table 2 <i>Inclusion and exclusion criteria</i>	89
Table 3 <i>Results from the synonymy knowledge test</i>	127
Table 4 <i>The results of the Shapiro Wilk Test of normality</i>	129
Table 5 <i>Levene's Test for Equality of Variances</i>	130
Table 6 <i>The status of the statistical assumptions for this study</i>	130
Table 7 <i>The results of the Mann Whitney U test</i>	131
Table 8 <i>The results of synonymy use test</i>	133
Table 9 <i>Perceived ease of use and usefulness of Thesaurus</i>	138
Table 10 <i>Summary of the textual metafunction analysis of sample 1</i>	144
Table 11 <i>Summary of the textual metafunction analysis of sample 2</i>	145
Table 12 <i>Summary of the textual metafunction analysis of sample 3</i>	146
Table 13 <i>Summary of the textual metafunction analysis of sample 4</i>	147
Table 14 <i>Summary of the textual metafunction analysis of sample 5</i>	149
Table 15 <i>Summary of the textual metafunction analysis of sample 7</i>	151
Table 16 <i>Summary of the textual metafunction analysis of sample 8</i>	152

List of figures

Figure 1 <i>The development from cave painting to content management systems</i>	36
Figure 2 <i>Approaches to discourse analysis according to disciplinary origins</i>	41
Figure 3 <i>Text in context</i>	44
Figure 4 <i>Language and context, system and instance</i>	47
Figure 5 <i>Cohesion system</i>	57
Figure 6 <i>Types of Reference Based on Halliday (1976)</i>	61
Figure 7 <i>Power Thesaurus' user interface on computer</i>	77
Figure 8 <i>Power Thesaurus' icon and user interface on mobile phone</i>	78
Figure 9 <i>Power Thesaurus' user interface on mobile phone</i>	79
Figure 10 <i>Features of Power Thesaurus</i>	80
Figure 11 <i>The visualization of the Search, Filtration, and Selection process</i>	90
Figure 12 <i>Research designs that are frequently used in the social sciences</i>	108
Figure 13 <i>Steps in data processing</i>	111
Figure 14 <i>Quantitative data tabulation, cleaning, and coding</i>	118
Figure 15 <i>Corpus analysis of data from Section II (Synonymy Use Test)</i>	119
Figure 16 <i>Annotation of excerpts for discourse analysis</i>	120
Figure 17 <i>Age of the respondents</i>	121
Figure 18 <i>Respondents' language learning experience</i>	121
Figure 19 <i>Comparison of the results and hypothesis testing summary</i>	134
Figure 20 <i>Smartphone and desktop/laptop ownership</i>	135
Figure 21 <i>Internet access</i>	136
Figure 22 <i>Familiarity of the respondents with Electronic Dictionaries</i>	136
Figure 23 <i>The extent of using EDs</i>	137
Figure 24 <i>Dictionaries known/used by the respondents</i>	137

Figure 25 <i>Responses on ETDs' Perceived Ease of Use</i>	139
Figure 26 <i>Visualization of responses on ETDs' Perceived Usefulness</i>	141

List of appendices

Appendix A: <i>Request For Permission to Conduct Research at Department</i>	179
Appendix B: <i>Synonymy Knowledge and Use Test</i>	180
Appendix C: <i>Students' Questionnaire</i>	183
Appendix D: <i>Test's Validation Form and Opinionnaire</i>	192
Appendix E: <i>Questionnaire's Validation Forma and Opinionnaire</i>	195
Appendix F: <i>Test Coding Book</i>	198

Table of contents

Declaration.....	2
Dedication.....	3
Acknowledgements.....	4
Abstract.....	5
List of acronyms	6
List of tables.....	7
List of figures.....	8
List of appendices	10

General introduction

1. Background of the study	17
2. Statement of the problem	19
3. Research questions	20
4. Research hypotheses	20
5. Research aims.....	21
6. Research methodology	21
7. Population, sampling, and sampling technique.....	22
9. Ethical considerations	22
10. The documentation style	23
11. Demystification of terms.....	23
11.1. Academic writing	24
11.2. Academic vocabulary	24
11.3. Synonymy.....	24

11.4. Electronic thesaurus dictionary	24
12. Structure of the thesis	24

Chapter one: Introducing academic writing and Computer-Assisted Writing

Introduction.....	30
1.1. The nature of writing.....	31
1.2. Writing instruction	31
1.3. Academic writing	32
1.4. The importance of academic writing in the EFL context.....	33
1.5. Research on academic writing.....	33
1.6. Aided-writing (AW) and its history	34
1.7. Computer-assisted writing (CAW)	36
1.8. Major problems facing EFL students in academic writing	36
<i>1.8.1. The issue of academic vocabulary in academic writing.....</i>	<i>37</i>
1.9. Text linguistics	38
1.10. Major approaches to text analysis	40
1.11. Systemic functional linguistics (SFL).....	41
1.12. Important terminology in SFL.....	42
<i>1.12.1. Context.....</i>	<i>43</i>
<i>1.12.2. Register.....</i>	<i>46</i>
<i>1.12.3. Discourse, Text, and Clause</i>	<i>48</i>
<i>1.12.4. The semantic metafunctions.....</i>	<i>50</i>
<i>1.12.5. Theme/given and rheme/new</i>	<i>51</i>

1.12.6. <i>Types of themes</i>	53
1.12.7. <i>Markedness of themes</i>	54
1.13. Texture	54
1.14. Cohesion.....	55
1.14.1. <i>Grammatical cohesion</i>	57
1.14.2. <i>Lexical cohesion</i>	61
Conclusion	63
Chapter two: Introducing electronic dictionaries (ETDs).....	64
Introduction.....	66
2.1. Definition of dictionary	67
2.2. Types of dictionaries	68
2.3. Printed dictionaries.....	69
2.4. Electronic dictionaries.....	70
2.5. Potential advantages and disadvantages of EDs	71
2.5.1. <i>Advantages of EDs</i>	71
2.5.2. <i>Disadvantages of EDs</i>	72
2.6. Electronic thesaurus dictionaries (ETDs).....	73
2.7. The history of thesaurus dictionaries	73
2.8. The importance of thesaurus use	74
2.9. Power Thesaurus	75
2.10. Definition of synonymy	80
2.11. Synonymy knowledge and use.....	80

2.12. The importance of synonymy knowledge for EFL learners..... 81

2.13. Synonymy in academic writing 81

Conclusion 82

Chapter three: A systematic review of the related literature

Introduction..... 86

3.1. Search, filtration, and selection process 87

 3.1.1. *The search process* 87

 3.1.2. *The screening process* 87

 3.1.3. *Inclusion and exclusion criteria* 87

 3.2.1. *The integration of CALL and MALL in English Language Teaching* 90

 3.2.2. *Research on the use of EDs in fostering vocabulary acquisition and writing* 91

 3.2.3. *Bridging the gaps; a synthesis of the reviewed studies* 94

Conclusion 97

Practical part

Chapter four: Research methodology

Introduction..... 102

4.1. Research methodology: Theoretical background..... 103

 4.1.1. *The research paradigm*..... 103

 4.1.2. *The research approach*..... 105

 4.1.3. *The research design*..... 106

 4.1.4. *Data collection methods* 108

 4.1.5. *Data analysis procedures* 109

4.2. Research methodology for this study: Choices and rationale 111

4.2.1. <i>Research paradigm</i>	111
4.2.2. <i>Research approach</i>	112
4.2.3. <i>Research design</i>	113
4.2.4. <i>Data collection</i>	113
4.2.5. <i>Data analysis method and procedure</i>	116
4.2.6. <i>Population and sampling technique</i>	119
4.2.7. <i>Procedure</i>	121
Conclusion.....	121

Chapter five: Results and discussions

Introduction.....	125
5.1. Synonymy Knowledge Test.....	126
5.1.1. <i>Testing the normality of distribution</i>	127
5.1.2. Comparison of the results of synonymy knowledge test.....	128
5.2. Synonymy use test.....	131
5.2.1. <i>The results of the synonymy use test</i>	131
5.3. Results and discussion of the questionnaire.....	134
5.3.1. <i>Students profile</i>	134
5.3.2. <i>Perceived ease of use and usefulness of thesaurus</i>	136
5.3.2. <i>Discussion</i>	137
5.4. The qualitative analysis of section II.....	140
5.4.1. <i>The textual metafunction analysis</i>	140
5.4.2. <i>Final discussion and concluding remarks</i>	152

5.5.1. <i>Implications</i>	156
5.5.2. <i>Limitations</i>	160
5.5.3. <i>Future directions</i>	160
Conclusion	161
General conclusion	162
References.....	166
Appendices.....	185
ملخص الدراسة.....	205

General introduction

1. Background of the study

The landscape of language teaching and learning has been revolutionized since the early 1980s by virtue of the rapid technological advances. ELT was not an exception and benefited from the integration of Information and Communication Technologies (ICTs) immensely. Al-Kadi (2018) asserts that “in the field of foreign language teaching and learning, this proliferation did not go unnoticed. The succession of ICTs in the second half of the 20th century inaugurated a period of Technology-Enhanced Language Learning (TELL)”. During this period, new trends like Computer-Assisted Language Learning (Henceforth CALL) have emerged. With this luxury being invested in, ELT benefited from different technological features of CALL to promote the mastery of the four language skills mainly writing. In the realm of this reform, teaching vocabulary within writing classes started to captivate more attention of expert writing instructors. Over the years, substantial shifts in theory, belief, and practice have occurred in the teaching of language, specifically vocabulary, grammar, or their combination in lexicogrammatical features of a language as part of the writing class or curriculum (Paltridge, 2004; Reid, 1993, 2006 cited in Coxhead & Byrd, 2007). However, some problems including poor vocabulary knowledge from the part of the learners forced writing instruction to remain extremely challenging for teachers (Taha Mahmoud, 2022).

It is reported that among the most common problems that hinder university students' effective communication through writing mode are the inability to select or find the correct words and the inability to write coherent paragraphs effectively (Aldabbus & Almansouri, 2022; Taha Mahmoud, 2022). In the same line with this postulate, Csomay and Prades (2018) found significant relationships between academic vocabulary use and essay scores in some text-types. This is also evident in Brun-Mercer and Zimmerman's (2015) who noted that

“effective writing entails not only knowing a lot of words, but knowing them well. To know a word well enough to use it in writing presupposes knowing its form, meaning (concepts, referents, and associations), and use (grammatical function, collocations, register, frequency)”. This knowledge and ability to use an academic vocabulary item along with its alternative is focal to the production of academic writing of high quality. This is especially stressed by Danglli and Abazaj (2014) who emphasized that the correct use of synonyms can add color and accuracy to the text. For that reason, the issue of teaching vocabulary was at different historical stages among the most important dilemmas that modern language teaching and learning encountered. In that regard, Santos (1988) concluded very earlier that writing courses should include instruction on vocabulary building and lexical selection. In fact, this was a strong reason for pedagogists and writing instructors to consider the integration of state-of-the-art technologies to aid in meeting the needs of the learners and achieve the major objectives of the process as a whole.

In the Algerian context, Benzitouni (2016) examined the benefits of using dictionaries to foster vocabulary learning and use to cater to a resolve. Meanwhile at Biskra University, Saihi (2013) concluded that a substantial number of EFL students at the department of English are unable to write polished and cohesive essays. A common problem that was reported in all of these studies was the inability of students to use academic vocabulary, especially synonymy, to establish text coherence and cohesion and make their writing flow. Therefore, and following Jordan’s (2003) recommendation of using thesauri dictionaries to foster synonymy knowledge and use, hereby, it is hold that using electronic thesauri will likely help Algerian Master’s students at Biskra University to optimize lexical cohesion in their essay writing.

2. Statement of the problem

Students who major in Applied Linguistics at the department of English at Mohamed Khider University of Biskra are introduced to the module of Academic Writing, which is mainly designed to help them foster their mastery of writing academic texts. However, many of them struggle to effectively produce cohesive, coherent and comprehensible texts, and to effectively develop their writing skill. This is especially mentioned in Saihi (2013) who stated that “in Biskra University, most of the students fail to write an essay in terms of its structure as well as the language they use” (p. 78). This struggle is often manifested in the written essays that they produce in the rest of the courses, mainly at the level of coherence and cohesion. In this same context, Hoadjli and Lahlouhi (2018) maintained that “many learners struggle in the writing process and end up producing pieces of writing that are ineffective or even incomprehensible showing poor mastery of language usage” (p. 67).

After observing this phenomenon, an informal discussion with the teachers taking charge of these courses was conducted by the researcher and it confirmed the existence of such a problem. The discussion revealed that one major reason for this deficiency is the inability of the students to properly acquire the Academic Vocabulary which is compulsory to enrich any advanced piece of writing. Academic vocabulary is a type of words synonyms that fits into a particular context and is less common in others. As the subject-specific lexis that should appear in advanced texts and contexts, academic vocabulary is essential for producing scholarly discourse. However, it was observed in the said local that many students encounter an avalanche of difficulties at the level of choosing the suitable words for contexts like these. Thus, they end up sticking to the basic lexis that they acquired at earlier stages in the process of Foreign Language Learning.

A functional solution that the researcher suggests, to not only help EFL students

surmount this issue but also to potentially scaffold incidental vocabulary acquisition, is the use of electronic thesauri during the very act of writing. A thesaurus is a type of dictionary that lists words with their alternatives, i.e., synonyms. Henceforth, this study will hold that using them in producing academic writing may not only help students overcome these problems of lexis selection and vocabulary retention, but may also reinforce their incidental synonymy acquisition and enlarge their linguistic repertoire as it may acquaint them with a number of words attached to their corresponding synonyms.

3. Research questions

The present study will attempt to cover the aforementioned missing part of the literature by answering the following research questions:

RQ1: To what extent do electronic thesaurus-assisted writing activities yield more cohesive Academic Writing?

RQ2: Do thesaurus-assisted writing activities improve lexical cohesion in M1 students' academic writing?

RQ2.1: In what ways do thesaurus-assisted writing activities improve lexical cohesion in M1 students' academic writing?

RQ3: What are the attitudes and perceptions of M1 students towards the perceived ease of use and usefulness of Electronic Thesaurus Dictionaries?

4. Research hypotheses

The aforementioned research questions lead to raising the following hypotheses:

RH1: Electronic thesaurus-assisted writing activities will improve synonymy use in

M1 students' Academic Writing.

RH2: Electronic thesaurus-assisted writing activities will improve overall lexical cohesion in M1 students' academic writing.

RH3: M1 students who will use electronic thesauri dictionaries to explore synonyms while writing will exhibit positive attitudes and higher self-perceptions towards the ease of use and usefulness of this instrument.

5. Research aims

The study aimed to explore the influence of integrating electronic thesaurus dictionaries in academic writing activities. More specifically, the aims of this study were as follows:

- Measure the extent to which electronic thesaurus-assisted writing activities improve synonymy use among Algerian M1 students' Academic Writing.
- Explore possible effects of electronic-assisted writing activities on overall lexical cohesion in Algerian M1 students' academic writing.
- Explore M1 students' attitudes and perceptions towards the ease of use and usefulness of electronic thesauri dictionaries as an assisting tool that can leverage lexical cohesion in their academic writing.

6. Research methodology

By virtue of the pragmatist research paradigm, this study followed a quasi-experimental design with convergent parallel and static-group comparison mixed-methods approach to data collection and analysis. The aim was to gather and analyze authentic data both qualitative and quantitative by means of its twofold nature. The first of which was to measure the extent to which electronic thesaurus-assisted writing activities may influence the use of synonyms in

M1 students' Academic Writing. The second, meanwhile, was to explore the possible effect(s) that thesaurus-assisted writing activities could have had on the lexical cohesion of M1 students' academic writing, and their attitudes and perceptions towards the use of this tool to help improve their writing quality. Abiding by this nature of the study, a static group comparison design was employed to test the efficacy of the treatment in a one-shot experiment. This design was also chosen as an alternative to the non-equivalent control group pretest/posttest design which was initially to be the design adopted for this study. Due to the inability to recruit the said participants who objected to grant the researcher their consent to take part in a long-term treatment as their study schedule was busy, this design was chosen. Data were gathered by means of a written test and an online questionnaire. It was then analyzed using a host of tools and methods as explained in chapter five.

7. Population, sampling, and sampling technique

This study took place in the Department of English at Mohamed Khider University of Biskra during the second semester of the academic year 2023/2024. The participants were 16 first-year master students enrolled in the Sciences of Language program at the same department. The rationale behind selecting this population was that they best represent the typical graduate Algerian EFL students whose major is linguistics, and who are required to produce considerable amounts of academic writing to complete their degree. They are expected to be between the ages of twenty and twenty-five years old and have Arabic as their mother tongue (L1). A total of thirty participants will be recruited through voluntary sampling, with eight assigned to the experimental group (Henceforth EG) and eight assigned to the control group (Hereafter CG). Both will be non-randomly recruited.

9. Ethical considerations

The researcher placed with high precision a priority on the research ethical considerations.

First, a consent letter to ask for permission to conduct the study in the said department on the aforementioned sample was sent to the head of the department (see Appendix A). A copy of this consent letter was stamped and forwarded to the director of the faculty's library where the experiment took place. Then, the participants were contacted via their Facebook group of study to obtain their consent of participation voluntarily. This was to ensure that no strain from any authority has been put on them. Furthermore, they were assured of anonymity and confidentiality throughout the research process. The data collected in this study will remain completely anonymous. No personally identifiable information will be shared within the appendices, and the information that the participants chose to provide is not going to be connected back to them by any means. Addedly, the participants were made fully aware that the results may be published within the final manuscript of this master dissertation and may be shared with other researchers through the university online data repository. Ultimately, the study protocol adhered to the ethical guidelines of Mohamed Khider University of Biskra and relevant research ethics codes.

10. The documentation style

The present study adhered to the seventh edition of the American Psychological Association (Hereafter APA) style of documentation. Abiding by the nature of Applied Linguistics stream, this documentation style was opted for. No institutional conventions or traditions that concern the documentation process were taken into application in writing this manuscript and no exceptions from the APA 7th edition were made.

11. Demystification of terms

To ensure clarity and consistency in this research, it is safer to demystify some key terminologies that will be used hereby by providing their operational definitions as follows:

11.1. Academic writing

The type of writing that academics opt for to communicate their ideas and thoughts to certain audience(s). It mirrors a high sense of responsibility, critical thinking, and deep analysis of facts by actively engaging with existing knowledge. The depth and complexity of communication in this type of writing help writers realize clear and concise communication of ideas. As such, it undergoes academic conventions and integrity.

11.2. Academic vocabulary

A set of lexical items that characterize academic work, organize scientific discourse, and build the rhetoric of academic texts.

11.3. Synonymy

The paradigmatic semantic relationship between two words or more that are identical or near to each other in terms of meaning.

11.4. Electronic thesaurus dictionary

Computerized versions of traditional thesauri, which are a type of dictionary that presents words' synonyms and antonyms, offering advanced search capabilities, dynamic synonym and related word suggestions, and integration with other digital tools.

12. Structure of the thesis

Abiding by some organizational purposes, the present thesis undergoes the following structure:

Chapter one functions as the point of departure of this work. For this very reason, it debarks from an account for the nature of writing as a cognitive activity. Then, it underscores academic writing and computer-assisted writing along with a brief overview of research on

academic writing. Next, the importance of academic writing in the EFL context is discussed in addition to an account for the major problems facing EFL learners in academic writing. A scrutiny elaboration on the issue of academic vocabulary in academic writing is then provided. Finally, the rest of it is devoted to introducing Text Linguistics and Discourse Analysis, mainly Systemic Functional Linguistics.

Chapter two is devoted to defining dictionaries in general. Then their types, advantages and disadvantages of using them are tackled. Then, Electronic Thesaurus Dictionaries are presented along with brief history about them, and their importance for language learners. Power Thesaurus, the independent variable in this study, is then presented, and the rest of the chapter is devoted to Synonymy.

Chapter three is about reviewing some relevant studies that were found in the literature. Although scarce, the studies that were found are reviewed with the purpose of spotting gaps in the existing body of knowledge about the topic of electronic thesauri use in writing.

Chapter four concerns the methodology grounded for the study. It first draws from the literature definitions of some key terms that are important in research. Then, it describes in details the data collection methods and data analysis procedures that are employed herein.

Chapter five provides a thorough discussion of the results obtained from the analysis of the data gathered. It also comprises a final saying about these findings and the researcher's concluding remarks about them. Finally, the implications, limitations, and future research directions are given.

The last part of this study is the general conclusion, where a summary of the whole study is provided.

Theoretical part

Chapter one

Chapter One: Introducing Academic Writing and CAW

Introduction

1.1. The nature of writing

1.2. Writing instruction

1.3. Academic writing

1.4. The importance of academic writing in the EFL context

1.5. Research on academic writing

1.6. Aided-writing (AW) and its history

1.7. Computer-assisted writing (CAW)

1.8. Major problems facing EFL students in academic writing

1.8.1. The issue of academic vocabulary in academic writing

1.9. Text linguistics

1.10. Major approaches to text analysis

1.11. Systemic functional linguistics (SFL)

1.12. Important terminology in SFL

1.12.1. Context

1.12.1.1. Context of situation

1.12.1.2. Context of culture

1.12.2. Register

1.12.2.1. Field

1.12.2.2. Tenor

1.12.2.3. Mode

1.12.3. Text and discourse

1.12.3.1. Discourse

1.12.3.2. Text

1.12.3.3. Clause

1.12.4. The semantic metafunctions**1.12.4.1. Ideational metafunction****1.12.4.2. Interpersonal metafunction****1.12.4.3. Textual metafunction****1.12.5. Theme/given and rheme/new****1.12.5.1. Theme (given information)****1.12.5.2. Rheme (new information)****1.12.6. Types of themes****1.12.6.1. Topical theme****1.12.6.2. Textual theme****1.12.6.3. Interpersonal theme****1.12.7. Markedness of themes****1.12.7.1. Marked themes****1.12.7.2. Unmarked themes****1.13. Texture****1.14. Cohesion****1.14.1. Grammatical cohesion****1.14.2. Lexical cohesion****Conclusion**

Introduction

Academic writing is a crucial skill for success in higher education for many disciplines including English Language. It is associated with the use of formal language, and it adheres to the disciplinary conventions (Hyland 2004). However, it could occasionally adhere to some arbitrary institutional traditions. It is widely accepted that some of the features that academic prose enjoys include complex grammatical structures richness with sophisticated lexical items, such as technical terms and academic vocabulary. This not only sets it apart from other types of writing, but also makes it an increasingly daunting skill that challenges the three angles of the didactic triangle alike. That is, for teachers how to promote its mastery; for learners how to learn it; and for the content of this course what should it combine. To resolve that, research on academic writing has long set off a series of attempts to disambiguate such intricacies of what and how to teach in order to foster learners' mastery of academic writing. On the one hand, numerous studies have explored the nature, development, assessment, impact of technology, and disciplinary variations of academic prose (Flower & Hayes, 1981; Leki, 2009; Moss, 2005; Hampel, 2009; Hyland, 2015). On the other hand, research on writing pedagogy has repeatedly yielded a variety of approaches to writing instruction. Consequently, there are now several approaches to writing instruction. In fact, the most state-of-the-art approaches to teaching writing are now being computerized. To account for this dynamic field, this chapter aims at introducing academic writing and Computer-Assisted Writing (Henceforth CAW). It first begins by introducing the nature of writing and its instruction. Academic writing and computer-assisted writing (CAW) are then defined along with a brief overview of research on academic writing. Next in a row, the importance of academic writing in the EFL context is discussed in addition to an account for the major problems facing EFL learners in academic writing. A scrutiny elaboration on the issue of academic vocabulary in academic writing is then provided. Finally, the rest of it is devoted to

introducing Text Linguistics and Discourse Analysis, mainly Systemic Functional Linguistics.

1.1. The nature of writing

In ELT, writing is always perceived as a complex skill to be taught and learned. For teachers, it is quite a challenge to promote the mastery of this skill among students especially when it is delivered within a time-bound course. For learners, however, the nature of writing, being different from other skills like speaking, makes it daunting to be grasped. This complexity of writing nature has been addressed by a number of scholars. For example, Byrne (1988, p. 1) noted that “when we write, we use graphic symbols: that is letters or combinations of letters which relate to the sounds we make when we speak”. This denotes the complexity of the nature of writing, and that it requires more cognitive and physical effort than that made to be involved in verbal communication. On the nature of writing, Crystal (2006) also believed that “writing is a way of communicating which uses a system of visual marks made on some kind of surface. It is one kind of graphic expressions” (p. 275).

1.2. Writing instruction

Writing has always been regarded as one of the most difficult language skills to teach. In English language teaching, "teachers usually teach the language skills by following a systematic order which starts with listening, speaking, reading and then writing" (Bourafai, 2022, p. 29). It appears from this order that writing instruction is pushed back to somewhat advanced stages in language courses due to its complexity and to the fact that it assumes some knowledge of the language. Over the history, researchers and teachers have oscillated between focusing on the written product that students are meant to produce (the final text), and focusing on the creative processes of writing as a whole, the role of the individual in the act of writing, and the social aspects of writing, including students' identities, disciplinary

conventions, and the larger social context (Galbraith and Rijlaarsdam, 1999 cited in Coffin et al., 2003, p. 32-33). This denotes that there is a distinctive evolutionary development of models and approaches to writing instruction. Each came in response to the inadequacy of an existing approach to meet the needs of pupils in continually changing educational contexts.

1.3. Academic writing

Academic writing, or scholarly writing, is the type of writing that is used in various academic disciplines and which appears in a variety of forms such as: books, research reports, monographs, and student versions of all of these types of writing (Nesi & Gardner, 2012). It is “a means of producing, codifying, transmitting, evaluating, renovating, teaching, and learning knowledge and ideology in academic disciplines” (Fang, 2021, p. 3). Academic texts vary from a discipline to another according to the specific writing features and conventions that each of these is associated with (Spack, 1988; Hyland, 2002, Nesi & Gardner, 2012). Especially at the graduate level, there are clear differences among texts typical of the arts (or humanities), the social sciences, the natural sciences, the life sciences, and those produced in professional schools such as engineering or architecture (Swales & Feak, 2012, p. 3). However, all scientific work has some common characteristics (Swales, 1990) which are referred to as transferrable generic skills (Hyland, 2002). These characteristics, that this formal type of writing is bound by, include intertextuality, which means that a text is being linked to others’ works (Swales, 1990). Intertextuality is confirmed by proper citation or reference to the works of others. This shows that the author is participating in general development processes (Swales, 1990). However, the way in which this work is written, what is described and how it is written can vary depending on the type of work and the conditions under which it is published. (Swales, 1990).

1.4. The importance of academic writing in the EFL context

In the context of teaching English as a Second or Foreign Language, writing plays important roles in empowering success in the higher education journey. According to Flowerdew & Wang (2015), the successful production of academic texts is important for language learners as it is at the core of negotiating interactive relationships among members of the same academic community, and as it helps them claim and establish their own academic identities. Similarly, Fang (2021) also pointed out that “control over academic writing gives students and scholars capital, power, and agency in knowledge building, disciplinary practices, identity formation, social positioning, and career advancement” (p. 3). Additionally, academic writing is important in EFL contexts due to the increasing number of nonnative speakers of English who are producing intellectual works and who are seeking a wider audience for their work (Delaney, 2013). That is to say that this skill of communication is very crucial for academics to expand the reach of their own voices. For example, a close look at research on the importance of AW in EFL context revealed that teaching academic arguments in essays is important in an EFL context, as it helps students improve their argumentative structure and transfer skills to new topics (Bacha, 2010). To Juliaty (2019), academic writing in EFL context is important for shaping learners' characteristics and nurturing their growth as writers in the academic environment. Ultimately, Flowerdew & Wang (2015) conclude that academic writing helps EFL learners develop their own authorial identities and engage with their audiences in discipline-specific manners.

1.5. Research on academic writing

Like other skills of the language, writing had its share of interest in research on second and foreign language, though not equal to that of the other skills like speaking. According to Leki et al. (2010), the field of L2 writing in English, while still relatively young, has clearly come

of age. They go on to say that “the last 25 years have seen several firsts in L2 writing research” The table below is a summary of their synthesis of the major landmarks in the history of research on L2 writing:

Table 1

Important landmarks in the history of research on L2 writing

Criteria	Date
The first journal devoted exclusively to L2 writing (the Journal of Second Language Writing)	n.d
The first book linking L2 reading and writing	(Carson & Leki, 1993)
The first book focusing on adult education and L2 English	(Burnaby & Cumming, 1992)
The first book on what is being called Generation 1.5, that is, high school immigrant students	(Harklau, Losey, & Siegal, 1999)
The first bibliographies of published work	(Silva, Brice, & Reichelt, 1999; Tannacito, 1995)
The first conferences devoted exclusively to L2 writing (Purdue Symposium on Second Language Writing and others)	(Silva, 1999)
Several accounts of the history of L2 writing pedagogy and of the discipline itself documented the development and growing importance of L2 writing studies as a field of practice and investigation	(Blanton, 1995; Cumming, 1998, 2001b; Kaplan, 2000; Matsuda, 1998, 1999, 2003c, 2003d; Matsuda, Canagarajah, Harklau, Hyland, & Warschauer, 2003; Raimes, 1991; Silva, 1990, 1993; Silva & Brice, 2004; Silva & Matsuda, 2002)

Note. Adapted from Leki et al. (2010, p. 1).

1.6. Aided-writing (AW) and its history

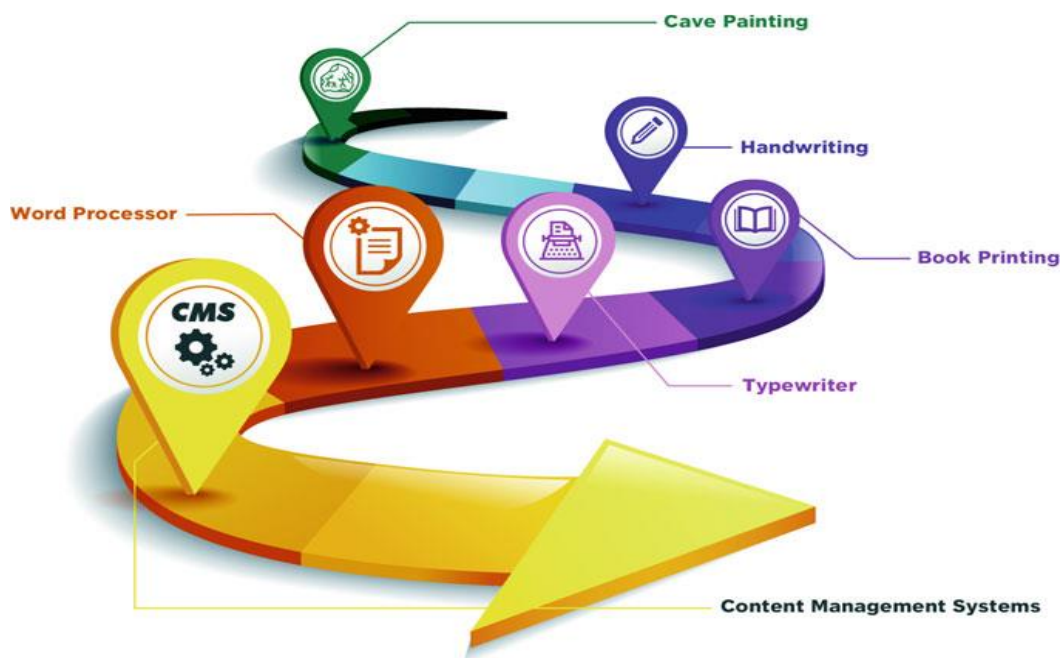
With the advent of the writing system thousands of years ago, human beings relied heavily on tools to write. First man is said to have used hollowed bones or stalks (bamboo, cane) to draw paintings on the walls of caves which they inhabited as shelters. Years later, quill, hollow, horny barrel of a bird’s feather, used as the principal writing instrument from the 6th century until the mid-19th century, when steel pen points were introduced (Britannica, The Editors of

Encyclopaedia, 1998). André Klahold and Fathi (2020) summarized the history of the tools that aided writing as follows:

From cave painting, in which human fingers still served as tools, to clay and stylus, papyrus and feathers, to book printing, the creation and reproduction of “information” became ever easier. With the typewriter, text production itself became more flexible and efficient. Word processing combined simple production with efficient reproduction. Today’s “Content Management Systems” enable the production and publication of texts in different media channels. They can also be used to create and publish multimedia content (p. 15)

Figure 1

The development from cave painting to content management systems



Note. Adapted from André Klahold & Fathi, (2020, p. 15).

1.7. Computer-assisted writing (CAW)

In the recent years, computers were used as a tool to aid writing in what is known as Computer Assisted Writing, CAW for short. On the importance of using computers in writing, Chelli (2013) noted that “the ability of computers to operate in the written mode to retrieve, process and organize written language in many ways surpasses unaided human faculties; therefore, mastering the written word in its electronic guise has become essential” (pp. 68-69). All of these features, along with others, make the usability of computers in performing different writing tasks utmost functional. From a research perspective, several scholars admitted that computers can bring about effective writing. For instance, Al-Menei (2008) reported on various studies that discuss the effect of Computer-Assisted Writing (CAW) on writing instruction and students’ overall performance. These studies have found that CAW can have a positive impact on students’ writing abilities, including improvements in grammar, style, and spelling. One of the key findings was that CAW can lead to significant improvements in students’ writing abilities. It can be effective in improving various aspects of writing, such as grammar, style, and organization, and the use of word processors in CAW allows students to receive immediate feedback on their writing and make corrections. It was also found that CAW can promote student-centered learning, problem-solving skills, and self-dependence in writing. CAW users tend to achieve better scores in writing compared to those who receive traditional writing instruction. Overall, the studies that Al-Menei (2008) suggest that CAW can be a valuable tool in teaching academic writing and can enhance EFL students’ writing skills.

1.8. Major problems facing EFL students in academic writing

Although the history of research on academic writing shows ongoing contributions, the challenge to promote academic writing mastery seems to be existent still. This is especially

true as many relatively recent studies are still reporting a number of acute deficiencies that occur in students' written productions and which results in a more strain on writing instruction as a whole. For instance, Taha Mohamed (2022) stated that teaching writing has become difficult because of the challenges faced by the students in learning writing skills including lack of vocabulary, poor grammar, and poor spelling. In fact, some of the writing instruction approaches themselves are outdated and they are no longer valid for developing learners' writing competences (Hinkel, 2002). This may further problematize writing instruction and results in other problems such as slowing the acquisition of the academic skills needed to write in L2 or FL effectively. In that regard, Hinkel (2002) argues that "the exclusive use of a process-writing approach, the relative absence of direct and focused grammar instruction, and the lack of academic vocabulary development contribute to a situation in which non-native students are simply not prepared to write academic texts" (pp. 257–265). To wrap up, it is apparent now that research on academic writing is dynamic and it is continuously attempting to solve problems that both learners and teachers encounter repeatedly with academic writing like the issue of vocabulary shortage, poor grammar, and poor spelling. Still, there is a dire need for further research on potential solutions that can help resolve this issue.

1.8.1. The issue of academic vocabulary in academic writing

Besides good command of grammar, vocabulary knowledge and use are said to be springboard for writing polished academic texts. Taha Mohamed (2022) and Hyland (2004) agreed on the importance of vocabulary knowledge for successful writing. Concerning the same, Paquot (2011) defined academic vocabulary as "a set of options to refer to those activities that characterize academic work, organize scientific discourse, and build the rhetoric of academic texts" (p. 4). This definition does not only bridge the presence of

academic vocabulary in an academic text with its organization but also stresses its importance as the backbone for well-written texts.

Nurjanah and Setiyaningsih (2022) affirmed that the mastery of using academic vocabulary has a positive influence on students' argumentative writing skills. This is statistically proved through a test that they conducted to measure the correlation between both variables. Hinkel (2002) made a pithy remark about the list of priorities that curriculum designers should take into account when tailoring writing syllabi. They wrote that “among the top priorities, non-native students need to learn more contextualized and advanced academic vocabulary, as well as idioms and collocations to develop a substantial lexical arsenal to improve their writing in English” (p. 247).

With its various aspects, academic vocabulary can achieve unity and cohesion, and brings clarity to the text. The lack of its knowledge results in non-organized academic writing and hinders communication. In line with that, Gass and Selinker (2008), in their explanation on comprehensibility, assessed a letter that one of them received from a non-native speaker (NNS) of English. Although grammatically correct, the letter was extremely difficult to understand due to poor and misuse of vocabulary by the addresser. They deduced that “an additional factor determining comprehensibility is the NNS’s ability to contextualize the language by using appropriate vocabulary and linking devices” (p. 311). Thus, not all vocabulary items fit in all the locations in a text. This, again, necessitates a good knowledge of not only vocabulary items but also their alternatives. That is to say that learning vocabulary is better to go hand in hand with learning their synonyms in order to avoid any confusion or wrong ways of expressing thoughts.

1.9. Text linguistics

Owing to the evolution of linguistic theory in the early 1960s, the text (whether spoken or

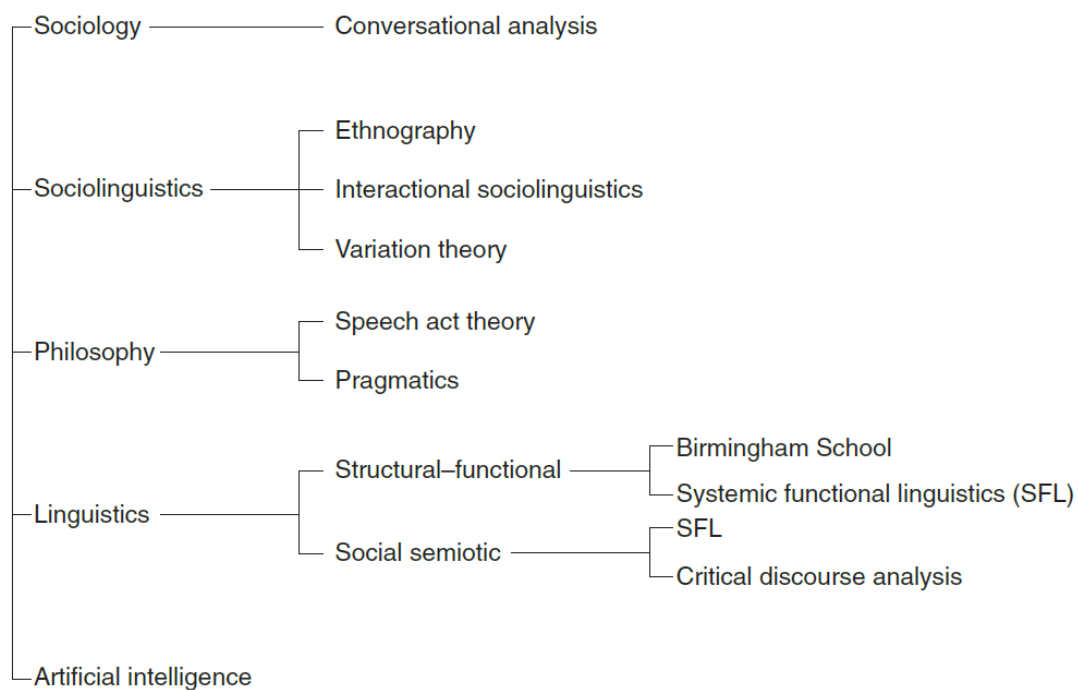
written) took its own share of interest and has become a focus to not only linguistics but other surrounding areas of inquiry within the realm of social sciences. There rose a new branch to the linguistic analysis of texts known as Text Linguistics (De Beaugrande & Dressler, 1994). Focusing on structure, coherence, and communication, this branch of linguistics studies language in texts, and it uncharts the underlying categories of texts to enhance language learning and communication skills in foreign language education (Breslavets, 2022). It focuses on the structure and presentation of texts. (Esser, 2009) and studies how language functions in texts, focusing on meaning, structure, and discourse (Halliday & Webster, 2014). As an approach to text analysis, it studies the structure and coherence of written discourse, focusing on how texts are constructed and how linguistic units relate to each other within a text (Sanders & Sanders, 2006, p. 598). More specifically, it delves into components like experiential systems, processes, participants, modality, textual meaning, and rhetorical structures within texts (Halliday & Webster, 2014). Notably, this branch evolved rapidly to encompass a broader view of text as a communicative unit. According to Teun van Dijk (1979 cited in De Beaugrande & Dressler, 1994, p. 14), "text linguistics cannot in fact be a designation for a single theory or method. Instead, it designates any work in language science devoted to the text as the primary object of inquiry". This young field of inquiry share interest in the text with discourse studies. In fact, Stubbs (1983) makes no clear distinction between the terms "text" and "discourse" since discourse analysis is said to apply to written texts (cited in Widdowson, 2004). Altogether, text linguistics and discourse studies have yielded substantial insights into the analysis of texts and their meanings. Finally, it is postulated that new innovative and powerful tools that helped study texts beyond the range of words and sentences have been presented.

1.10. Major approaches to text analysis

Although text analysis is not exclusively used in linguistics solely, it relied heavily in its development on ongoing efforts of scholars working on this area of inquiry. Within linguistics, several approach to analyze discourse have emerged since the early contributions of Zellig Harris to discourse analysis (Widdowson, 2004). However, these approaches have been used in different areas as suggested by McCarthy et all. (2010) in figure 2 below

Figure 2

Approaches to discourse analysis according to disciplinary origins.



Note. adapted from Eggins and Slade (1997 cited in McCarthy et. al, 2010, p. 57).

As shown in the figure, a myriad of approaches of discourse (or text) analysis, that are relevant to linguistics, can be used to unveil the intricacies of both spoken and written language. These approaches draw from other disciplines such as philosophy, sociology,

artificial intelligence, etc. McCarthy et al. (2010) explain that “discourse analysts come from a number of different academic disciplines and the field is vast” (p. 56). However, this study will be ultimately limited to the Systemic Functional Linguistics approach as the tool to be used in the analysis of the obtained data.

1.11. Systemic functional linguistics (SFL)

In the 1970s, a functional approach to language was pioneered by British linguist M. A. K. Halliday. Although functionalism as a theory was not a novelty at the time, Halliday’s contribution grounded what is referred to as Systemic Functional Grammar (Henceforth SFG). The latter has rapidly been a springboard for the state-of-the-art linguistic theory, viz., Systemic Functional Linguistics (SFL) and equipped it with the required parameters to qualify as a linguistic theory that is significantly viable for text analysis. This theory viewed language as a cultural code that teaches societal participation (Law & Matthiessen, 2023). That is to say, language is not only a structured system of signs that human use to realize certain communicative goals. Rather, it holds that language empowers its users to be part of the society that they belong to. This theory stemmed from the Halliday’s SFG in response to the structuralist perspective of language, which dominated the linguistic landscape earlier. Addedly, SFL has been substantially functional in text analysis. Its main interest is “how people use language with each other to accomplish everyday social life and how social worlds are, in turn, created in and through language. This interest leads to an investigation of how language is structured to achieve socio-cultural meanings” (McCarthy et. al, 2010, p. 63). Given the fact that SFL departs from text analysis, Halliday defined a text as “any authentic stretch of written or spoken language” (Crane, 2012, p. 131) regardless of its form and size. Hence, the interest of this theory is in the way different components of the language are used by humans to create intact meaning(s) while realizing the different communicative

tasks. These linguistic elements are referred to as the resources of lexicogrammar, and they are “deployed in the processing, creation, and interpretation, of text” (Halliday & Matthiessen, 2004, p. 586). In the realm of SFL, language is viewed as a functional-semantic resource. In Eggins (2004) terms, it “is modelled as networks of interconnected linguistic systems from which we choose in order to make the meanings we need to make to achieve our communicative purposes. The product of a sequence of choices is a text, and the choices realized in text are themselves the realization of contextual dimensions, including specific situational configurations of field, mode and tenor (register), cultural conventions (genre) and ideological positions.” (p. 327). In SFL, “the linguistic analysis of text is not an interpretation of that text; it is an explanation” (Halliday & Hasan 1976, p. 327). From a systemic functional perspective, “text analysis is not an interpretive but an explanatory activity ... While the interpretation of a text would aim to uncover and state *what* a text means, the systemic analysis of a text aims to uncover and state *how* a text means.” (Eggins, 2004, p. 329).

1.12. Important terminology in SFL

In Systemic Functional Linguistics, the terminology used is placed with precision at a very high level of importance. Hasan (2005) argued that

SFL has been described as an extravagant model of language with a bewildering array of technical terms, many of which seem, at first sight, to refer to the same concept.

While, for proponents of other theories, this is seen as an unnecessary encumbrance, the reason for this extravagance lies in SFL’s uniqueness as an exotropic theory of language that locates ‘language in the social environment’” (Hasan 2005, 2009, p. 37)

Barlet (2017) comments “by this definition, Hasan is simultaneously differentiating SFL from formalist theories of language, which do not locate language in the social environment, and

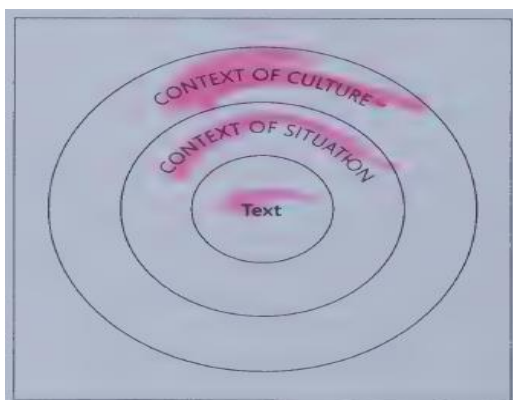
from general sociolinguistics, which does not claim to be an integrated theory of language” (p. 375). Hence, the rest of this chapter is devoted to reviewing some of these terms.

1.12.1. Context

The term context is of utmost importance to systemic linguists and to the theory. As a notion, it has its roots in traditional Ethnography and Sociology, which all came in contact with Philology, or modern Linguistics, as early as the beginning of the 20th century. The seminal works that featured context as crucial to studying and understanding meaning include Malinowski’s (1923) and Firth’s (1957). Noteworthy, both the Polish sociologist and ethnographer Malinowsky and the British linguist Firth have deeply impacted the founding father of SFL, M. A. K. Halliday’s understanding of context. According to Hasan (2009), “inherited from Malinowski (1923, 1935) via Firth (1957) at the general linguistics stage, context has been greatly elaborated since Halliday first used it in his early writings (1959; 1961). This importance of context then lies in its role in guiding the explanation of how language function as to make meaning. In SFL, a text “always occurs in two contexts, one within the other” (Butt et al., 2012, p. 22) as shown in the figure below.

Figure 3

Text in context



Note. Adapted from Butt et al. (2012, p. 22).

As the figure suggests, every text occurs with a given context of culture, where both the speaker/listener or writer/reader are aware of the cultural parameters that necessary for encoding and decoding it. However, within the same culture, meaning can change depending on the situation where it is made. Halliday (1985, p. 7) refers to context of situation (environment of text) and context of culture (environment of linguistic system), both being (necessary for the adequate understanding of the text)” (cited in Halliday and Webster, 2009, p. 240). In this way, the context of culture, too, encompasses the context of situation. To systemic linguists, being able to understand and explain these contextual variables is a chief key to analyzing texts.

1.12.1.1. Context of situation A distinctive term that SFL is known for is the context of situation. Halliday (1985, p. 7) refers to this term as “the environment of text”. In fact, Halliday drawn this term from the work of the Polish anthropologist and ethnographer Malinowski who first acknowledged the context of situation in the study of meaning and stated that:

It should be clear [...] that conception of meaning as contained in an utterance is false and futile [...] utterance and situation are bound up inextricably with each other and the context of situation is indispensable for the understanding of the words. Exactly as in the reality of spoken or written languages, a word without linguistic context is mere figment and stands for nothing by itself, so in the reality of a spoken, living tongue, the utterance has no meaning except in the context of situation (Malinowski 1966,1923, p. 307)

Aljahdali (2020) reports that SFL distinguishes three components of the context of situation (contextual variables), namely, field, tenor, mode. Based on these variables, language performs three functions, namely experiential function, interpersonal function, textual

function, to make meaning. This was also highlighted by Fki (2018), who stated that “the context of situation contributes to the analysis of texts by virtue of including the three components of field, mode and tenor. These three variables “always leave a ‘trace’ in the text: what is relevant in the context of situation would be illuminated by the language of the text (Hasan, 2009, p. 176)” (p. 405). These three components are also known as the elements of register, which is defined below.

1.12.1.2. Context of culture Halliday’s notion of “context of culture” is also grounded in the works of the Polish anthropologist Malinowski. According to Halliday (2014),

the contextual potential of a community is its culture – what we call the context of culture, following Malinowski. The context of culture is what the members of a community can mean in cultural terms; that is, we interpret culture as a system of higher-level meanings ... in which various semiotic systems operate, including language, paralanguage (gesture, facial expressions, voice quality, timbre, tempo, and other systems of meaning accompanying language and expressed through the human body) ... and other systems of meaning such as dance, drawing, painting, and architecture. (p. 32)

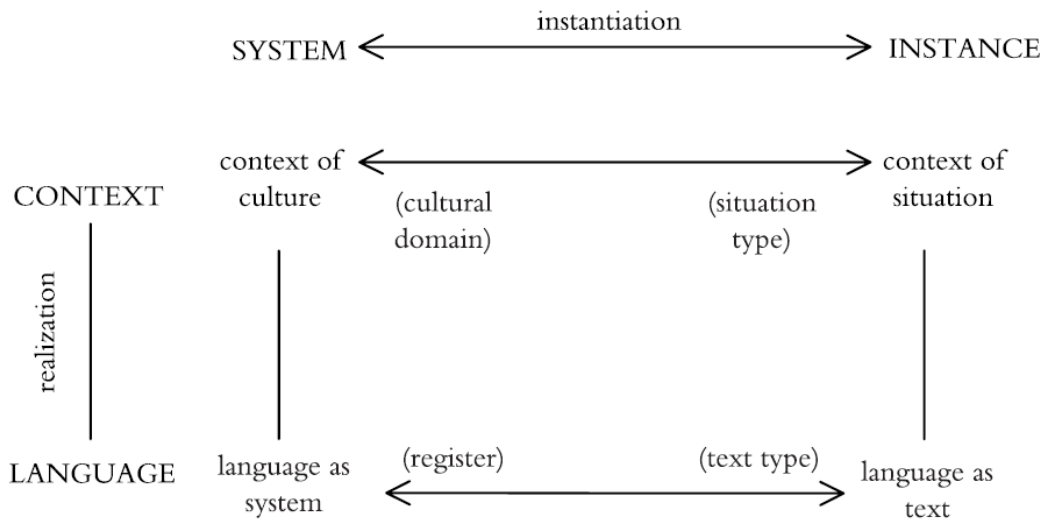
Halliday (2009) simply defined the context of culture as “the context for meaning potential (for language as system)” (p. 274). To Hasan (2009), “the context of culture in SFL theory encodes those features which “the acculturated can interpret, act on and in, and evaluate” (p. 169).

In SFL, “culture is instantiated in situation, as system instantiated in text, and realized in (and construed by) language. The same relation as that holding between linguistic strata,

i.e., semantics: lexicogrammar: phonology: phonetics” (Halliday, 2009, p. 275). The figure below highlights this

Figure 4

Language and context, system and instance



Note. Adapted from Halliday (2009, p. 275).

To Halliday, “Cultural domain and register are “sub-systems”; their likeness is viewed from “system” end. Situation type and text type are “instance types”; their likeness is viewed from “instance” end” (Halliday, 2009, p. 275).

1.12.2. Register

In the realm of SFL, register theory was central to discussing the terminology related to the theory. Eggins (2004) mentioned that “register theory identifies three main dimensions of situations or context: field, tenor and mode” (p. 58). Aljahdali (2020) reports that SFL distinguishes three components of the context of situation (contextual variables), namely, field (the activity being developed; the subject), tenor (the relationships between the

participants in a communicative situation), mode (the form by which the message is transformed; the symbolic organization of text). Together, these elements form register. Ling (2013) sees that “the fundamental purpose of register analysis is to find out what situational factors determine what linguistic features” (p. 166). According to These elements of the semiotic system are defined as follows:

1.12.2.1. Field This dimension refers to what is going on, where what is going on is interpreted institutionally in terms of some culturally recognized activity (what people are doing with their lives, as it were). When people ask you what you do when first getting to know you, you tend to answer in terms of field (Martin, 2001, p.152). Examples of fields are activities such as tennis, opera, cooking, farming, politics, education and so on. Eggins (2004) defines field of discourse as “what the language is being used to talk about” (p.90). This variable included not only the specific topic of discourse, but also the degree of technicality or specialty on the one hand or everyday quality on the other. In other word, what we are writing or talking about will determine whether the field of discourse is technical or non-technical.

1.12.2.2. Tenor This dimension refers to “the way you related to other people when doing what you do. One aspect of this is status” (Martin, 2001, p.153). Gerot and Wignell (1994) claim that the tenor refers to “the social relationships between those taking part in terms of status or power, affect and contact” (p.11). In other words, it implies that people are more likely to choose the appropriate language forms unconsciously according to their status in relation to one another”.

1.12.2.3. Mode The Mode dimension refers to “the channel you select to communicate” (Martin, 2001, p.153). That means the choice you most commonly presented is between speech and writing. Gerot and Wignell (1994) argue that “it includes three points:

how language is being used? Is the channel of communication spoken or written? And is language being used as a mode of action or reflection?" (p.11) For example, a student who wants to ask for a leave had to select a channel to communicate with his or her teacher. The student can choose face-to face or via telephone, even e-mail to achieve his or her purpose.

1.12.3. Discourse, Text, and Clause

The debate over distinguishing the terms "discourse", "text", and "clause" has its roots in the early foundation of discourse studies. In the following, both terms are defined according to scholars from the field of discourse analysis.

1.12.3.1. Discourse Foucault (1969) provided an extensive definition of discourse as the "systems of thoughts composed of ideas, attitudes, courses of action, beliefs, and practices that systematically construct the subjects and the worlds of which they speak" (cited in Lessa, 2005). Meanwhile, Halliday (cited in Martin and Ringham, 2008) defined discourse as

a unit of language larger than a sentence and which is firmly rooted in a specific context. There are many different types of discourse under this heading, such as academic discourse, legal discourse, media discourse, etc. Each discourse type possesses its own characteristic linguistic features. This understanding of the term is generally accepted in discourse analysis (p. 51)

Fairclough (2003) also defined discourse as "ways of representing aspects of the world – the processes, relations and structures of the material world, the 'mental world' of thoughts, feelings, beliefs and so forth" (p. 176). From a sociocognitive perspective, van Dijk (1993) claimed that discourse is

related to power and is seen as legitimation for certain attitudes, opinions etc. The social cognitions of the powerful are both the source and the result of discursive

(re)productions. Discursive (re)production of power results from social cognitions of the powerful, whereas the situated discourse structures result in social cognitions (p. 259)

1.12.3.2. Text the term “text” also appears to problematic when it comes to assign a common definition to it. For instance, it is according to Halliday and Hasan (1985)

a product in the sense that it is an output, something that can be recorded and studied, having a certain construction that can be represented in systematic terms. It is a process in the sense of a continuous process of semantic choice, a movement through the network of meaning potential, with each set of choices constituting the environment for a further set” (p. 10).

Webster (in Halliday, 2002) argued that “a text is described as 'a semantic concept', 'a sociological event, a semiotic encounter'; it is 'the means of exchange', 'the primary channel of the transmission of culture', 'the semantic process of social dynamics'” (p. 3). According to Halliday (2002), a text is “a semantic unit, which is not composed of sentences but is realized in sentences. A text is to the semantic system what a clause is to the lexicogrammatical system and a syllable to the phonological system” (p. 46). Eggins (2004) maintained that “the term text is a technical term for any unified piece of language that has the properties of texture” (p. 24). Overall, Drid (2010) attempted a fair definition to both terms and stated that “the word 'discourse' is occasionally employed to stand for what is spoken, while the word ‘text’ is employed to denote what is written” (p. 21).

1.12.3.3. The clause The clause in SFL refers to the “grammatical unit of the highest rank on the lexicogrammatical rank scale” (Matthiessen et al., 2010, p. 71). Analyzing it is very helpful when to explain how certain semantic choices are used to make meaning. According to Halliday and Webster (2009), “a clause is the complex realization of options

from these three functional semantic components: ideational, interpersonal and textual” (p. 6). A clause is then “the domain of systems of all kinds, experiential (e.g. transitivity), interpersonal (e.g. mood), and textual (e.g. theme)” (Halliday, 2002, p. 35). These are referred to as semantic metafunctions, which form the clause. Thus, it is important to know what is exactly meant by a clause before analyzing texts following SFL framework.

1.12.4. The semantic metafunctions

As any other linguistic theory, SFL distinguishes different systems of the language including semantics. However, the semantic component of the SFL model is “construed in terms of three metafunctions, ideational, interpersonal and textual (Banks, 2002). To explain this, Bartlett and O’Grady (2017) assert that

SFL theorises a three-way horizontal relationship across the strata, collectively known as the ‘metafunctions’. In describing the lexicogrammar, Halliday found that the features clumped into three tightly intracconnected, but loosely interconnected, groupings corresponding to ideational (Davidse; Butt and Webster), interpersonal (Andersen) and textual (Forey and Sampson) functions of different sorts (hence metafunctions) (p. 4)

These metafunctions are held responsible for construing the corresponding ideational, interpersonal and textual meanings. Halliday and Webster asserted that “each metafunctional component produces its own distinct dimension of structure” (2009, p. 6). The three metafunctions are defined below.

1.12.4.1. Ideational metafunction The ideational metafunction is “that part of the meaning which concerns the way external reality is represented in the text” (Banks, 2002, p. 2). It is according to Halliday and Webster (2009, p. 6), “the ‘construing experience’

function, realized as the structural configuration of process, participant(s), circumstance(s)”. Simply put, it is “the ability that language has to communicate meaning” (Sutherland, 2019, p. 90).

1.12.4.2. Interpersonal metafunction The interpersonal metafunction is concerned with “the relationships that exist between the speaker and his addressee(s), and between the speaker and his message” (Banks, 2002, p. 2). It is “the ‘enacting social relationships’ function, in structural terms closer to the syntactic tradition, i.e. Subject, Predicator, Complement(s), Adjunct(s)” (Halliday & Webster, 2009, p. 6). It “describes the different ways language producers relate to language receivers” (Sutherland, 2019, p. 129).

1.12.4.3. Textual metafunction This metafunction concerns the textual meaning. That is, “the ‘creating discourse’ function, in terms of theme and information structures” (Halliday & Webster, 2009, p. 6). The textual metafunction of language refers to “its ability to show clear links between any new clause and the discourse that came before it. This metafunction explains how we organize information in clauses and show the connections between clauses” (Sutherland, 2019, p. 129). It is “that part of the meaning potential which makes a text into a text, as opposed to a simple string of words or clauses. It thus involves phenomena such as thematic structure, information structure, and cohesion”. (Banks, 2002, p. 2,3). According to Matthiessen (1995), the textual metafunction is “concerned with presenting ideational and interpersonal meanings as text in context; it gives these meanings the status of information” (p. 95).

1.12.5. Theme/given and rheme/new

Following SFL theory, the clause is divided into two components, viz. theme and rheme (Matthiessen, 1995). Together, these components play crucial roles in linking the different parts of a text. As Halliday (2002) affirms, “it is not the theme, but the total Theme-Rheme

structure which contributes to the texture of the discourse” (p. 95). However, “the theme is the only one that matters in terms of describing those links” (Sutherland, 2019, p. 129).

1.12.5.1. Theme (given information) The theme refers to the first element of the clause. It is the point of departure of the message and locates and orients the clause within the text where it occurs. Fang Yan (1993, 1995), observed that “both English and Chinese make use of the initial position in the clause to identify the Theme, or the point of departure for the clause as message” (cited in Halliday & Webster, 2009, p. 8). The theme functions several textual functions, and these functions “can only be understood in the context of organizing information in texts. So, it is more meaningfully addressed as a discourse semantic resource, rather than a grammatical system” (Rose, 2019, p. 294). Sutherland (2019) argues that “it is important to constantly remind oneself that in a discussion of theme in relation to the textual metafunction, the concern is only with this first linguistic element” (p. 129). That is, by connecting back to different areas in the text, the theme can be viewed as the cornerstone of textual metafunction which concerns the analysis of text organization and cohesion. The basis of determining the location of the theme is to see how it is tied to what occurs before it and to what comes next to it. In other words, “knowing what a theme of clause is allows to know how this clause is organized, as a group of (“semantic choices”)” (Halliday & Webster, 2009), in relation to what occurred next or before it in the text. However, it should be noted that the theme does not necessarily have to be the subject of the clause.

1.12.5.2. Rheme (new information) The rheme of a clause is its second component which occurs right after the theme. It is “everything other than the theme, and it is in the rhemes where new information appears” (Sutherland, 2019, p. 131). This means that while there is, often, an insinuation about the information that the clause carries in its theme, the actual presentation of this information does not take place only in the rheme. To recapitulate,

the rheme is “the co-text of the theme that presents new information, which is linked to the earlier part of the discourse based on the link provided by the theme” (Sutherland, 2019, p. 131). In other words, the theme tells us how the message starts, then the rheme presents the rest of the message” (Sutherland, 2019, p. 131).

In summation, although both theme and rheme are important elements of the clause that discourse analysts are interested in, special attention is typically given to themes. The importance of the theme to textual metafunction lies in its indication of what is going to be provided in the clause and how it relates to what precedes it. In that regard, McCarthy (1991 cited in Tidjani, 2019, p. 86) infers that "the front of the clause (by whatever means) is a signal of what is to be understood as the framework within which what we want to say can be understood. The rest of the clause can then be seen as transmitting what we want to say within the framework" (p. 52).

1.12.6. Types of themes

Themes are classified into three types, topical, textual, and interpersonal as follows:

1.12.6.1. Topical theme A theme which mentions the topic that have been mentioned previously in the text. The topic is either a subject or a content, and it can be in the previous clause or in any other one in the text. According to Sutherland (2019), topical themes “relate to the content ‘topic’ of the text that comes before them.” (p. 140). Tidjani (2019) illustrates that a topical theme is “presented by a nominal group, a prepositional phrase, or an adverbial group” (p. 88).

1.12.6.2. Textual theme A word that provides a link through a conjunction and realizes connection between the clause it occurs in and the one that precedes it (Sutherland,

2019). In general, it “includes connectors such as coordinates and subordinates and conjunctive adjuncts which relate the clause to the preceding texts.” (Tidjani, 2019, p. 88).

1.12.6.3. Interpersonal theme A word or an expression that occurs at the beginning of the clause and allows the speaker/writer to comment, in the way they feel, on the information to follow in the rheme of the clause. It “shows how the clause it initiates is related to the listeners or readers” (Sutherland, 2019, p. 140). An interpersonal theme “consists of any combination of vocatives, modal adjuncts, and mood marking elements” (Tidjani, 2019, p. 88).

1.12.7. Markedness of themes

In linguistics, it is widely accepted that when something is marked, it means it is noticeable or unusual. Exactly the opposite, when it is unmarked, it is usual or common. In general, “the distinction between marked and unmarked is a useful one in many areas of linguistic study” (Sutherland, 2019, p. 131). This applies to themes as well, which are then categorized into marked and unmarked themes as follows:

1.12.7.1. Marked themes A theme is marked when it is not the subject of a clause. It “occupies the theme position, such as adjunct” (Tidjani, 2019, p. 88).

1.12.7.2. Unmarked themes The unmarked theme functions as a subject of the clause. In other words, “when the theme of the sentence conflates with its grammatical subject, the theme is called unmarked” (Tidjani, 2019, p. 88).

1.13. Texture

The concept of texture refers to the internal organization of a text which creates a sense of coherence and unity. It was first introduced by Halliday and Hasan (1976) who stated that

“the concept of texture is entirely appropriate to express the property of ('being a text')” (p. 2). Texture simply goes beyond simple grammatical correctness and construes how the language choices throughout a text connect and build upon each other. Halliday and Hasan (1976) alleged that “a text has texture, and this is what distinguishes it from something that is not a text. It derives this texture from the fact that it functions as a unity with respect to its environment” (p. 2). This unity (AKA Cohesion) is of twofold nature; grammatical and lexical. While grammatical cohesion is achieved by means of using some cohesive devices such as conjunction, reference, ellipsis, and substitution, lexical cohesion is realized in a text via repetition, synonyms, hyponymy, meronymy and collocation (Halliday & Hasan, 1976; Hasan, 1985; Halliday, 1992, 2004). Within the text, these cohesive devices tie ideas together and create a logical flow of information. By looking at texture, we can understand how a text is shaped to achieve a specific communicative purpose. According to Halliday and Hasan (1976), “if a passage of English containing more than one sentence is perceived as a text, there will be certain linguistic features present in that passage which can be identified as contributing to its total unity and giving it texture” (p. 2). To sum up, texture is “what makes a text into a coherent piece of language, as opposed to simply being an unorganized string of sentences” (Halliday & Webster, 2009, p. 7).

1.14. Cohesion

“The close interaction of cohesion and coherence counsels a science of texts as processing events to highlight the distinction between the two”.

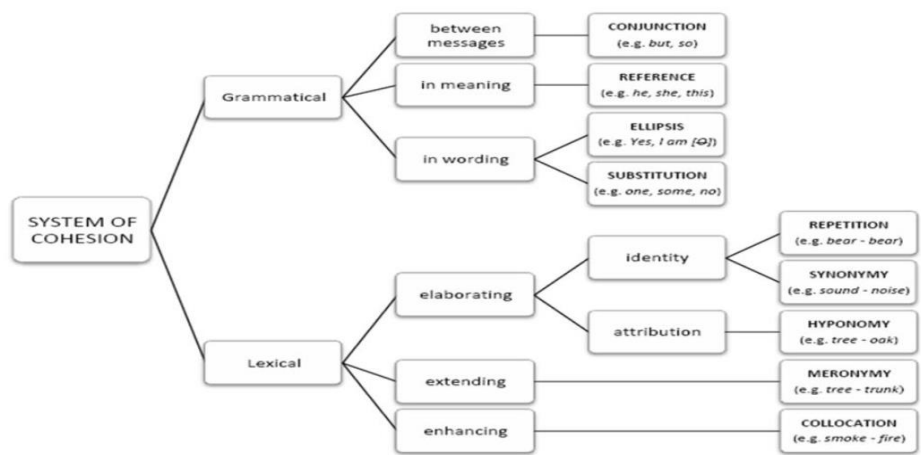
(de Beaugrande, 1997, p. 14)

In order to put hands on the definition of lexical cohesion, which will be the focus in this work, it is safe to begin with defining Cohesion; the umbrella term under which the former lays. Cohesion “describes the process whereby sentences or utterances are linked

together to form a text” (Martin & Ringham, 2000, p. 35). It refers to the “relations of meaning that exist within a text and that define it as a text” (Halliday & Hasan, 1976, p. 4). According to Martin and Ringham (2000), Cohesive ties (or devices) are “those words or phrases which enable the writer/speaker to establish relationships across sentence or utterance boundaries and which help to link the different parts of the text together” (p. 35). In fact, cohesion, like all the components of the semantic system, is realized through grammar and vocabulary, and can therefore be divided into grammatical and lexical cohesion. (Tanskanen, 2006). While Lexical cohesion includes devices such as reiteration (repetition, synonymy etc.) and collocation (co-occurrence of lexical items), Grammatical cohesion is divided into reference, substitution, ellipsis and conjunction. (Halliday & Hasan 1976). Figure 5 below displays the system of cohesion.

Figure 5

Cohesion system



Note. Adapted from (Halliday & Hasan, 1976; Halliday, 2004).

Halliday and Hasan (1976) emphasized that grammatical and lexical elements become cohesive only when they are interpreted through their relation to some other element in the

text, i.e. no single element can be cohesive by itself. But when two elements in a text are related, a cohesive tie is formed, contributing to the unity of the text (Tanskanen, 2006).

1.14.1. Grammatical cohesion

Grammatical cohesion is the glue that holds a group of sentences together by means of grammatical choices and items to establish text texture. It ensures a smooth flow of ideas and clear connections between the different parts of a text. According to Halliday and Hasan (1976), grammatical cohesion can be achieved through four underlying cohesive devices, namely conjunction: linking clauses and expressing relationships, reference: referring back to previously mentioned nouns, ellipsis: omitting items that their repetition is unnecessary, and substitution: replacing items with their alternatives. By exploiting these techniques effectively, writers can create a cohesive text where each sentence builds upon the last, and guide the reader through a logical and polished piece of writing. Given this important of grammatical cohesion, therefore, the following is an account for each of these techniques.

1.14.1.1. Conjunctions The cohesive pattern of conjunction, or conjunctive relations, refers to “how the writer creates and expresses logical relationships between the parts of a text” (Eggins, 2004, p. 47). According to Halliday and Hasan (1976), conjunctive elements are “cohesive not in themselves but indirectly, by virtue of their specific meanings; they are not primarily devices for reaching out into the preceding (or following) text, but they express certain meanings which presuppose the presence of other components in the discourse” (p. 226). Halliday and Matthiessen (2004) made a distinction between structural (i.e. grammatical) and non-structural (i.e. cohesive) conjunctive relations. To them, the non-structural use of the logico-semantic categories creates conjunctive links between sentences, not between clauses. Meanwhile, conjunctive cohesion “adds to the texture of text, helping to create that semantic unity that characterizes unproblematic text” (Eggins, 2004, p. 47).

Halliday and Matthiessen (2004), also “recognized three main types of conjunctive relations: elaboration, extension and enhancement” (p. 538-549). These three types of meaning are part of the logico-semantic system of the English clause, and “they allow the writer to create semantically meaningful structural links between clauses as they chain them together to form clause complexes” (Eggins, 2004). The first type, Elaboration, is “a relationship of restatement or clarification, by which one sentence is (presented as) a re-saying or representation of a previous sentence” (Eggins, 2004, p. 47). Halliday and Matthiessen (2004) “listed a number of common conjunctions used to express this relation” (p. 541), including: in other words, that is (to say), I mean (to say), for example, for instance, thus, to illustrate, to be more precise, actually, as a matter of fact, in fact (Eggins, 2004, p. 47). For example:

“Mallard had heart trouble. **In fact**, it was her heart that killed her”.

Extension is the second and it is “a relationship of either addition (one sentence adds to the meanings made in another) or variation (one sentence changes the meanings of another, by contrast or by qualification)” (Eggins, 2004, 47). Typical conjunctions listed by Halliday and Matthiessen include and, also, moreover; in addition, nor, but, yet, on the other hand, however, an the contrary, instead, apart from that, except for that, alternatively. For example:

“A kind intention or a cruel intention made the act seem no less a crime as she looked upon it in that brief moment of illumination. **And yet** she had loved him – sometimes”.

In the previous example, and yet expresses both addition (and) as well as variation (yet). Finally, the last type, Enhancement, refers to “ways by which one sentence can develop on the meanings of another, in terms of dimensions such as time, comparison, cause, condition or concession” (Eggins, 2004, p. 48). While common temporal conjunctions include: then,

next, afterwards, just then, etc., causal conjunctions include so, then, therefore, consequently, hence, etc. For example:

“Mrs. Mallard sat alone in her room for some time. After a while, she joined her sister and they went downstairs”.

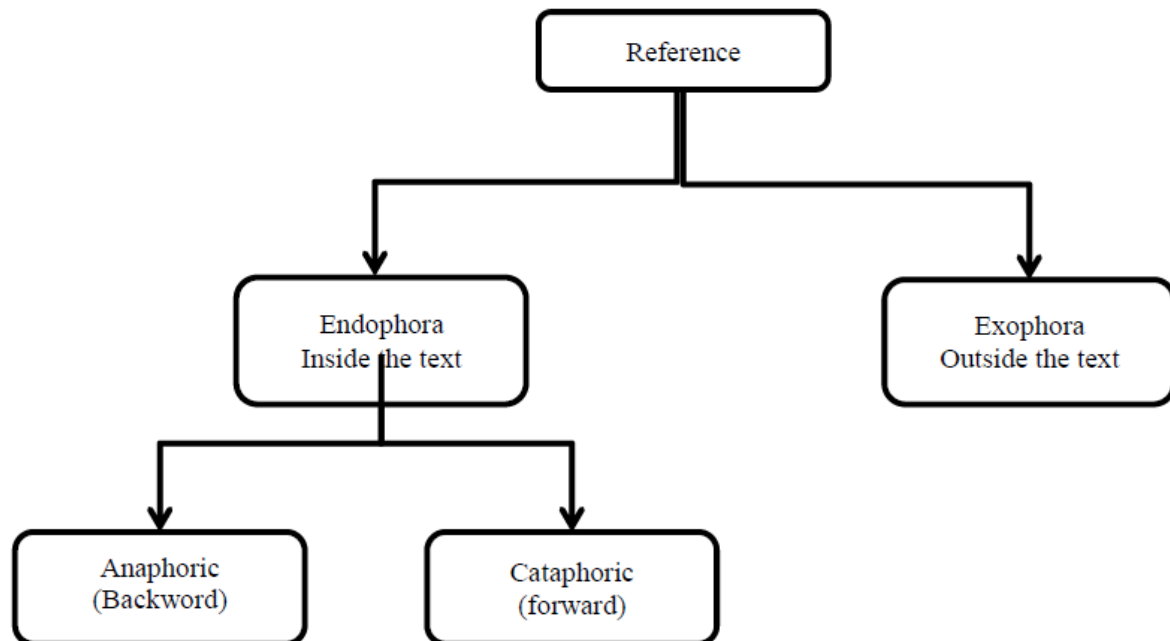
1.14.1.2. Reference It is a linguistic unit that directs the readers to refer back to what is already mentioned to understand particular element in the text (Tidjani, 2017). According to Sutherland (2019), a reference is “a word that has some meaning on its own, but has a more specific meaning if we refer somewhere else in the text” (p. 5). It “establishes two identical meanings through two different linguistic elements in different positions in the text, and it can be pronouns, possessive adjectives, possessive pronouns, demonstratives, and articles” Tidjani (2017, p. 80). A typology of reference was earlier introduced by Halliday and Hasan (1976) in their seminal work *Cohesion in English*, and Sutherland (2019) offered a summary of it as follows

to look back in the text to interpret a referent is called anaphoric reference. This process of looking back applies to written and spoken text. It is also possible to refer forward to words that will come later in the text. This is called cataphoric reference. Both anaphoric and cataphoric references are known together as endophoric reference, which means that they refer to words that are found in the text. There are also references that refer to things outside of the text. This is known as exophoric reference. An exophoric reference refers to the context, which is the physical space or situation in which the text is produced (p. 5-6)

It should be noted that in English, reference is the most common technique of establishing grammatical cohesion that many writers use often. Figure 6 below shows the typology of references.

Figure 6

Types of Reference Based on Halliday (1976)



Note. Adapted from Tidjani (2017, p. 81).

1.14.1.3. Ellipsis It can be simply understood as the omission of an item, and it can be interpreted as that form of substitution in which the item is replaced by nothing (Halliday & Hasan, 1976). It is similar to substitution in that both are grammatical cohesive; substitution involves usually omission of an element as it can be understood elsewhere in the text, or rarely an item that will occur (Tidjani, 2017). Sutherland (2019) explains “ellipsis involves the replacement of one thing with another. However, instead of using words as substitutes, in ellipsis we replace words with nothing” (p. 19). For example:

“Rheda opened the door and went out”.

One reads this sentence actually, knowing that Rheda performed two actions, i.e., did two things, in the sentence (opening the door and going out). Rheda is mentally interpreted as the subject of the two verbs without the need to restate his name again in the sentence.

1.14.1.4. Substitution It is an item or a phrase that is replaced by another one.

Substitution is seen by Halliday and Hasan (1976) as the replacement of one item by another. It is a relation in the wording rather than in the meaning. Sutherland (2023) sees that Substitution is a “form of cohesive relation in that different words, phrases and clauses are linked, joining them into a text level linguistic unit” (p. 15). While to Tidjani (2017), “the linguistic elements used to substitute are a nominal group, namely: one- does- so respectively” (p. 82), Sutherland (2023) illustrates that

Only a few words act as substitutes. One, ones and same are nominal substitutes, which means they are words that can take the place of nouns. The verb do in all its forms – do, does, did, done, has done, has been doing and so on – is the verbal substitute, taking the place of verbs or parts of verbs. The clausal substitutes so and not take the place of clauses and parts of clauses (p. 15)

1.14.2. Lexical cohesion

Cohesion operates within the lexical zone of lexicogrammar. Here “a speaker or writer creates cohesion in discourse through the choice of lexical items. [...] In this way, lexical cohesion comes about through the selection of items that are related in some way to those that have gone before” (Halliday & Matthiessen, 2004, p. 570). Lexical cohesion (AKA Phoric cohesion) is the “cohesive effect achieved by the selection of vocabulary” (Halliday & Hasan, 1976, p. 272). It “occurs when two (or more) words in a text are semantically related, that is, they are related in terms of their meaning or content” (Martin & Ringham, 2000, p. 81). More specifically, lexical cohesion is “the special kind of texture that is achieved by the use of

vocabulary, (a) by reiteration and (b) by collocation” (Halliday, 2004, p. 41). According to Halliday and Hasan (1976), lexical cohesion is “established through the structure of the Lexis, or vocabulary, and hence at the lexicogrammatical level” (p. 318). In Tidjani (2018), Halliday and Hasan (1976) appeared to have classified lexical cohesion, in the first introduction to SFL, into two types: *Reiteration* and *Collocation*.

1.14.2.1. Reiteration It refers to “the repetition of a lexical item, or the occurrence of a synonym of some kind, in the context of reference; that is, where the two occurrences have the same referent. Typically, therefore, a reiterated lexical item is accompanied by a reference item, usually the or a demonstrative” (Halliday & Hasan, p. 318-319). An example of this repetition “would be ‘I bought some books because books are my passion’ (Martin & Ringham, 2000, p. 81). According to Tanskanen (2006)

this relation involves the repetition of a lexical item, either identically, or in a modified form (synonymic expression, generalization, specification, co-specification; contrast is also a special case of reiteration). Items related by reiteration may also be referentially related, but this is not obligatory (p. 12)

1.14.2.2. Collocation It is “a word that is in some way associated with another word in the preceding text, because it is a direct repetition of it, or is in some sense synonymous with it, or tends to occur in the same lexical environment” (Halliday & Hasan, 1976, p. 319). To Tanskanen (2006), the relation of collocation is “an associative meaning relationship between regularly co-occurring lexical items, i.e. ‘words that keep each other company’” (p. 12). An example of collocation could be “illustrated by a sentence such as 'His body burnt with the fire of his passion'. The words 'fire' and 'burnt' are both used to express passion” (Martin & Ringham, 2000, p. 81).

Conclusion

As to conclude, this chapter served as a guide to foundational understanding of academic writing, which with its distinct features and conventions across various disciplines, stands as a crucial skill for success in higher education. Meanwhile, it covered the discourse analysis framework that will be used in this study and delved into its basic terms and notions. It first began with an attempt to describe the nature of writing and to discuss the process of teaching it in an EFL context. The concept of academic writing was then defined as far as narrowing down the scope of the chapter was concerned. An account of research on academic writing was thoroughly discussed with the purpose of offering a glance at the growing body of research on L2 writing and its pedagogical implications for writing instruction and learning, notably, the integration of computers in this process. Computer-Assisted Writing (CAW) as a merit of integrating CALL in ELT was then deemed substantially viable for promoting writing instruction and learning in a fully digitized era. This was followed by the challenges that EFL learners encounter when learning how to write academic texts. Light was especially shed on one major problem which is the lack of academic vocabulary knowledge and the inability to use them in writing properly. The last part was fully devoted to SFL and its important terms. This sets the stage for the following chapters, which will introduce Electronic Dictionaries as a potential solution to this challenge.

Chapter two

Chapter two: Introducing electronic dictionaries (ETDs)

Introduction

2.1. Definition of dictionary

2.2. Types of dictionaries

2.3. Printed dictionaries

2.4. Electronic dictionaries

2.5. Potential advantages and disadvantages of EDs

2.5.1. Advantages of EDs

2.5.2. Disadvantages of EDs

2.6. Electronic thesaurus dictionaries (ETDs)

2.7. The history of thesaurus dictionaries

2.8. The importance of thesaurus use

2.9. Power Thesaurus

2.10. Definition of synonymy

2.11. Synonymy knowledge and use

2.12. The importance of synonymy knowledge for EFL learners

2.13. Synonymy in academic writing

Conclusion

Introduction

As the title of this chapter suggests, introducing the Electronic Thesaurus Dictionaries (Hereafter ETDs) in general, and specifically “Power Thesaurus”, will be its main function. However, other elements will be present for the sake of coherence purposes. Also, it should be noted that introducing EDs and ETDs necessitates defining Synonymy; a linguistic phenomenon that is manifested in sophisticated scholarly texts; which can be daunting for EFL learners when writing them; and for which ETDs’ use is hereby suggested. To meet these aims, this chapter will be made up of three broader sections.

In the first section, the chapter will open with an attempt to define the dictionary in general. Both its types, i.e., printed and electronic will be introduced subsequently. This distinction should be made for more delineation. Next in a row comes an account for the advantages and disadvantages of dictionary use.

It will be up until the second section that Electronic Thesaurus Dictionaries (ETDs) will be tackled. A brief history of thesaurus dictionaries where information on the first emergence of thesauri, their evolution over time, and their digitization will follow. The last but one element in this section highlights the importance of thesaurus use, especially for language learners. Eventually, the main ETD “Power Thesaurus” will then be presented as the main tool that the researcher has relied on as the intended research intervention for this study.

Last but not least, a section that defines the semantic phenomenon namely Synonymy will wrap-up the chapter. Therein, synonymy knowledge and use for language learners are thoroughly explained. Further still, the importance of knowing this phenomenon for EFL learners is placed at the heart of this section along with the last component, Synonymy in academic writing.

2.1. Definition of dictionary

Dictionaries are considered as viable tools for pedagogical exploitations and purposes in the field of Second Language Acquisition. “For a number of reasons, dictionaries and second or foreign language acquisition can be thought of as forming a fine pair”, Bogaard (2010, p. 99) stated. Although it is true that “language learners all over the world have dictionaries and use them regularly” (Bogaard, 2010, p. 99), there is still an ongoing discussion in the literature about dictionaries, and the latter is still riddled with consistencies and contradictions. For example, no agreement seems to have been reached on a holistic definition for this tool. In the one hand, Maden (2020) defined the dictionary as “a reference book that records and explains the words of a language in all times or in a certain period, including their spelling, types, pronunciations, primary meanings and connotations, provides literary examples and reports the origins of adapted words” (836). In the other hand, Zgusta (1971) also defines the dictionary as follows

a systematically arranged list of socialized linguistic forms compiled from the speech habits of a given speech community and commented on by the author in such a way that the qualified reader understands the meaning of each separate form, and is informed of the relevant facts concerning the function of that form in its community
(p. 197)

From a lexicography point of view, Nielsen (2008) defined the dictionary as a lexicographical reference that shows interrelationships among the data. It is also seen as “a listing of lexemes from the lexicon of one or more specific languages, often arranged alphabetically, which may include information on definitions, usage, etymologies, pronunciations, translation, etc” (Webster's New World College Dictionary, 2002; Richard, 2019; Britannica, 2022 cited in Wikipedia Contributors, 2018). In brief, the aforementioned definitions of the dictionary

display a diverse perception of this tool from the perspective of different disciplines where it could be used.

2.2. Types of dictionaries

Nowadays, the word “dictionary” refers to any book containing lists of words with information about them be it in the digital or printed form. Thus, “dictionaries can be classified into two main types: printed dictionaries and digital ones” (Adha Nisa, 2022, p. 8). Owing to the progress that has been made in the domain of lexicography, dictionaries are nowadays of several types. Interestingly, scholars have provided different typologies and classification of these tools. In fact, this availability of various and divers typologies might be attributed to the fact that dictionary use studies fall into an area of inquiry that is an intersection drawing from several subfields. These subfields could combine lexicography, semantics, computational linguistics, etc. Having that taken into account, one finds it important to mention some of these typologies. The first of which, and perhaps the major typology, is that of General Dictionaries vs Specialized Dictionaries (Wikipedia Contributors, 2018). As the names suggest, general dictionaries are those comprising general words that could be used in any domain. The specialized ones, however, are merely made to combine certain words that are uniquely used in a given domain. For the EDs, Boonmoh (2010) suggested a threshold typology that combines pocket electronic dictionaries (PEDs), Internet-based dictionaries (online), and PC-based dictionaries (dictionaries on CD-ROMs). In fact, the aforementioned types themselves have different typologies. For example, Adha Nisa (2022, p. 10) highlighted several types of EDs, and they distinguished between a spell-checker in a word-processing program, a device that scans and translates printed words, a glossary for online teaching materials, or an electronic version of a respected hard-copy dictionary. To them, these are “all EDs of a sort, characterized by the same system of storage

and retrieval” (p. 10). Besides, Amsler (2009) differentiated between what they referred to as Terminological-Databases and Electronic Thesauri. They pointed out that

Terminological databases are special-purpose dictionaries that are used primarily to distinguish domain-specific terminology and choose appropriate terms when translating technical documents. Thesauri are special-purpose word books organized by relationships between words (p. 965)

Two types can be elicited from this excerpt, i.e., terminological databases and Electronic Thesauri (also thesauruses), as yet other forms of Electronic Dictionaries. Meanwhile, Wikipedia Contributors, (2018) provided an extensive set of types of printed dictionaries. This set includes: Bilingual dictionary, Collegiate dictionary (American), Learner's dictionary (mostly British), Encyclopedic dictionary, Monolingual learner's dictionary, Advanced learner's dictionary, Rhyming dictionary, Reverse dictionary (Conceptual dictionary), Visual dictionary, Satirical dictionary, Phonetic dictionary.

Finally, it could be inferred that dictionaries, though of various types, are all important for language learners as Li (2019) pointed out. They concluded that “their use, as a crucial learning activity” (107). Given the fact that several studies that compared the use of both dictionary types, i.e., electronic versus printed, reported that learners favored the e-versions, the rest of this chapter will attempt to shed more light on EDs as the central focus. As such, Electronic Thesaurus Dictionaries will be introduced.

2.3. Printed dictionaries

Printed dictionaries (also paper or traditional dictionaries) are the old form of the dictionary where words are gathered for a number of different purposes. They are “lists of words in the form of a paper-based book that can be bought cheaply and lasts for a very long time” (Adha

Nisa, 2022, p. 16). From a historical perspective, printed dictionaries were the introduced first, and for a long time, they served as a historical and shifting authority to the English language. While their historical lies in dominating for a long time as the only linguistic source that people referred to when in need for help with words and their meanings, their shifting authority lies in that they served for a long time until the introduction of their electronic counterparts. In that sense, Al-Sayed & Siddiek (2013) claimed that “since their beginning in the 18th century, English dictionaries have been viewed as the ultimate authority on English language as in *The Dictionary by Dr. Johnson (1747)*, *The Webster Dictionary (1855)* and *Oxford English Dictionary (1933)*” (p. 1745).

2.4. Electronic dictionaries

In a brave new world, the emergence of Natural Language Processing (Henceforth NLP) in the recent decades had proved the digitization of lexical resources to be useful, and stressed a dire need for this process to be generalized over all the linguistic resources available. Linguist resources are defined in TDIL-DC Contributors (n.d.) as “resources for the purpose of assisting linguists in their fieldwork, study and research”. They include “textbooks, electronic and printed reference materials, corpora, dictionary, ontology, fonts, software for linguistic data management and analysis” (TDIL-DC Contributors, n.d.). Back in the nineties, Sérasset (1994) noted that “recent developments in Natural Language Processing have highlighted the lack of multiusage lexical resources” (p. 1). These lexical resources are electronic dictionaries which are to be defined hereby.

According to Nesi (2000) the term electronic dictionary (or ED) can be used to refer to any reference material stored in electronic form that gives information about the spelling, meaning, or use of words. Amsler (2009) stated that “an electronic dictionary contains lexicographic information that is stored and accessed via a computer” (p. 965). They added

that “the term “electronic dictionary” may refer to the data alone (e.g., a machine-readable dictionary), but more typically refers to a software or software/hardware system that provides access to dictionary data” (p. 965).

2.5. Potential advantages and disadvantages of EDs

2.5.1. Advantages of EDs

The advantages of EDs are many, and numerating them could be a daunting task. To begin with, Heuberger (2020) synthesized that these merits could include the unique strengths of customization options, integration of translation tools, sophisticated thesaurus function, user-input, storage space utilization, improved accessibility of data, and potential for further refinement.

Improved accessibility is clearly one of the main advantages of electronic dictionaries over print reference works, allowing – at least in theory – more efficient and more effective retrieval of data (cf. De Schryver 2003: 157, cf. Pastor and Alcina 2010: 310). This is possible because of powerful search tools and techniques (p. 2)

Lew (2010) advocated that one of the chief merits of using EDs is that they save time and effort when looking up words’ meanings. Compared to the printed dictionaries, EDs help find word meanings in an interactive way. Instead of making a physical effort to turn the pages looking for the entry word, the meaning shall be displayed in EDs with one click. In congruence with Heuberger (2020), Bothma & Gouws (2020) indicated that dictionaries are part of a large number of information sources that users can easily access. Another advantage of EDs is that of space. Concerning that, Ferrett and Dollinger (2020) explained that “an undisputed advantage of online dictionaries, however, is that online dictionaries remove the traditional space constraints in paper dictionaries” (p. 3). They alleged that

Sidney Landau state that “the size of the dictionary is one of the earliest and most basic decisions to be made” (2001, p. 345) in print dictionaries, where almost all editing decisions are determined by it. Online dictionaries appear to have unlimited room for the inclusion of entries, language information and whatever the editorial team may desire. With so much data available in the internet age, lexicographers can indeed include a considerable amount of language information in a single entry, information that is only limited by the editorial time that may be dedicated to a given problem and no longer by space (p. 3)

This illustrates that EDs save more space by transcending the barrier of physical limit with the luxury of unlimited virtual space. Finally, from a personal experience, EDs are most of the time totally free, whereas printed dictionaries have to be bought from a bookstore or ordered online, which often costs considerable amounts of funds.

2.5.2. Disadvantages of EDs

As any other pedagogical tool, EDS are not disadvantages-free. In fact, some of their merits can be regarded from a different angle as demerits. For example, the space advantage that Ferrett and Dollinger (2020) mentioned is also a shortcoming of EDs that web developers and lexicographers have to surmount. Lew (2011, p. 2 cited in Ferrett & Dollinger, 2020) distinguishes between storage space and presentation space. Ferrett and Dollinger (2020) illustrated that

while storage space is vast, allowing lexicographers to store huge amounts of data, presentation space is determined by screen sizes and web design. Consequently, presentation space is still limited and acts as a hard constraint analogous to page size and page count in print dictionaries. Lexicographers and interface designers must

strive for entries to be free from clutter, allowing the presentation of the essential information in a clear and intuitive manner (p. 3)

Moreover, Adha Nisa (2022) maintained that an ED “user's eyesight may be harmed because of their constant staring at the computer, and the learner's vocabulary memory will be harmed because they look up the definition of a word rather than trying to memorize it” (p. 16). The last disadvantage of EDs to be mentioned hereby is related to the content's reliability. The content of EDs is said to “appear and disappear without warning and without trace” (Nesi, 2015, p. 587–8) as it could be naturally unstable by means of editorial teams' manipulation. Dziemianko (2018, p. 672–3 cited in Ferrett & Dollinger, 2020, p. 3) notes that users often consider online dictionaries to be less reliable than, and inferior in quality to, print dictionaries, partly because content modification is generally not communicated to the outside world.

2.6. Electronic thesaurus dictionaries (ETDs)

It is widely accepted that among the modern electronic dictionaries that language learners use is the thesaurus “(pl.: thesauri or thesauruses), sometimes called a synonym dictionary or dictionary of synonyms” (Wikipedia Contributors, 2018b, para. 1). This type of electronic dictionaries is “a reference work which arranges words by their meanings” (Wikipedia Contributors, 2018b, para. 1) and provides a variety of linguistic features to these words including their synonyms. The latter are defined as “words which have different forms but identical meaning” (Zgusta, 1971, p. 89).

2.7. The history of thesaurus dictionaries

The thesaurus is not a novelty. Rather, its history extends far beyond the 1st century AD. Indeed, the word thesaurus itself is deeply rooted in the past back to the ancient Greek era. Regarding this matter, Gina (2022) narrates that

the word thesaurus comes from the Latin word “thēsauros,” which was derived from the Greek “thēsauros”. The literal meaning of the Greek origin word is “a treasure,” “treasury,” “storehouse,” or “chest”. In other words, a thesaurus is a book, or “treasure chest” of synonyms (para. 2)

The resources about the first thesaurus indicate that it was made back to the first century and that it was titled ‘On Synonyms’. According to Gina (2022), “it was written by Philo of Byblos, a Greek writer, grammarian, and historian” (para. 3). Next is a thesaurus that was written in the form of a poem in Sanskrit. “In the fourth Century AD, “an Indian poet and grammarian named Amara Sinha wrote his version of a thesaurus in Sanskrit as a long poem” (Gina, 2022, para. 4). It should be noted however that the meaning of the word thesaurus changed over time and, it did not always mean the thesaurus that we know today. Rizer (2022) asserted that it “first was used to describe what we would think of today as dictionaries” (para. 3). Fast-forward to 1590s, “thesaurarie” was a title given to early dictionary compilers” (Rizer, 2022, para. 3) or who are known in today’s terms as lexicographers. Eventually, the year 1805 was a great milestone for thesauri making as the “British doctor named Peter Mark Roget started compiling a list of words arranged by meaning, and he completed and published the first modern thesaurus in 1852. This version of the thesaurus is still in circulation today” (Gina, 2022, para. 5).

2.8. The importance of thesaurus use

Like any other type of dictionary, thesauri are specialized dictionaries that are often exploited to look up possible alternatives of words. Linguistically speaking, the phenomenon of words having their alternatives is referred to in semantics as “Synonymy” (Cruse, 2000, 2011). Based on the existence of this phenomenon, thesauri have been made to help navigate words’ synonyms and to allow for easy access to them. When writing academic texts, one very often

needs to vary the lexis they use, especially when to avoid repetition. Hence, a tool like the thesaurus can be of abundant help in this intricate task. Besides, using advance alternatives of some lexical items can make the language more sophisticated and far beyond plain. For these different uses, Murphy (2013) reported in a study on dictionary use that

more than one fifth (21.6%) of the learners' dictionary use was aimed at finding 'alternative words' (i.e. synonyms) for a word they had in mind, usually to avoid repetition (56.5%) but also to increase the sophistication of their writing (41.9%), or to vary the style (1.6%).

Additionally, the thesaurus is helpful tool in writing, whether literary or academic texts. For this reason, Gina (2022) mentioned that “the original name of Roget’s thesaurus perfectly encapsulates the importance of thesauruses and the synonyms they provide—“Thesaurus of English Words and Phrases, Classified and Arranged So As to Facilitate the Expression of Ideas and Assist in Literary Composition” (para. 5).

2.9. Power Thesaurus

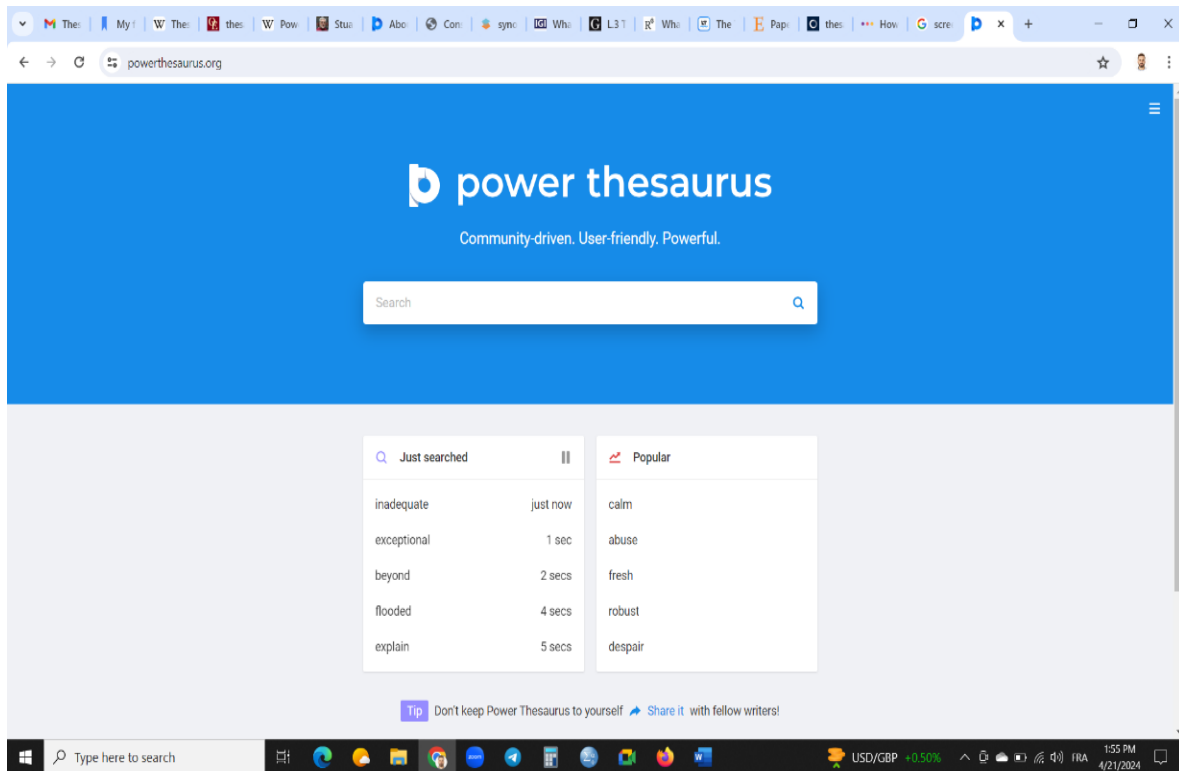
This study is an attempt to investigate the effectiveness of thesaurus-assisted writing activities in improving Algerian EFL learners' synonymy use as a measure of lexical cohesion in the academic writing of Master One students of English at Mohamed Khider University of Biskra. The electronic thesaurus “Power Thesaurus” will be used in this study as the main intervention. The latter is “a comprehensive tool that usefully provides antonyms as well as the usual synonyms. It is grammatically and syntactically accurate for the most part, but accepts corrections, additions and amendments from the using community” (Aken, 2014).

Whether on computers or mobile devices, power thesaurus' most powerful feature is

its neat user interface that is user friendly (Wikipedia Contributors, 2024). Figure 7 below displays Power Thesaurus' user interface on computer.

Figure 7

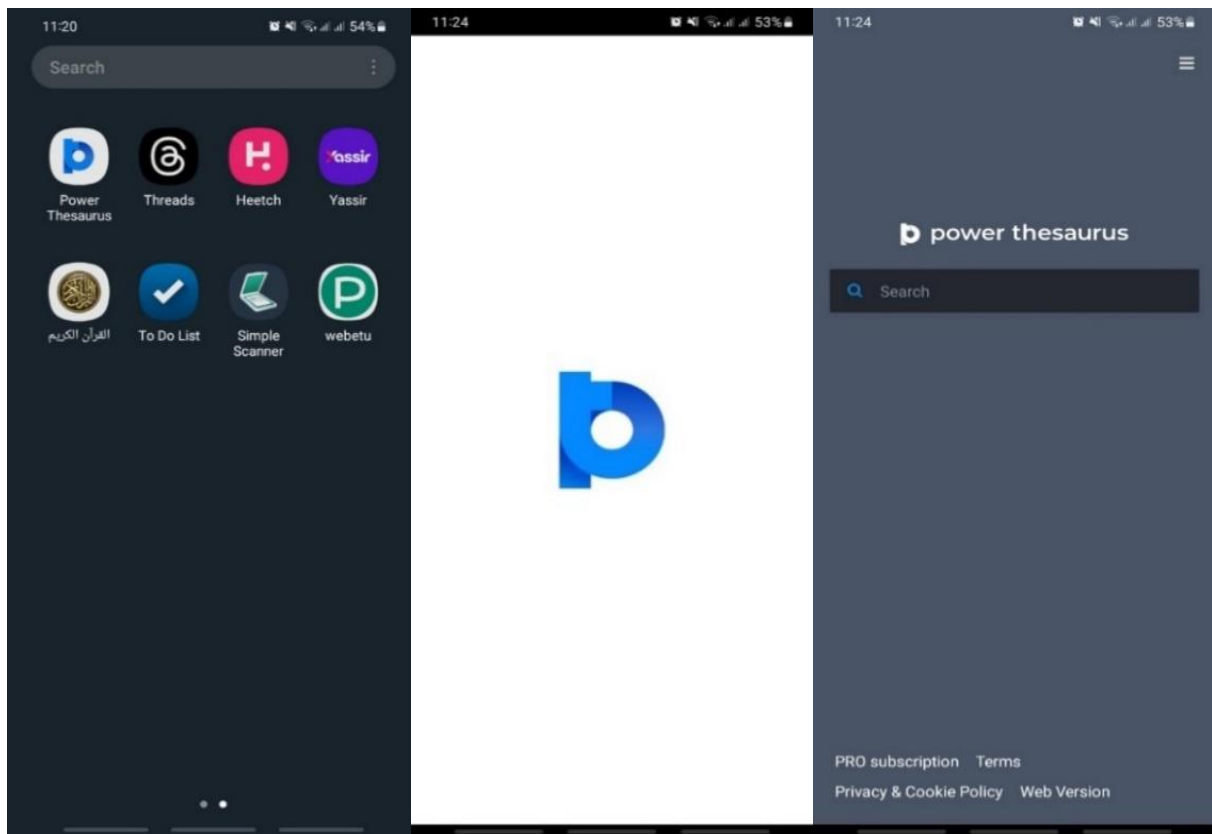
Power Thesaurus' user interface on computer



Note. Figure 6 shows the icon and the user interface of Power Thesaurus' on mobile phones.

Figure 8

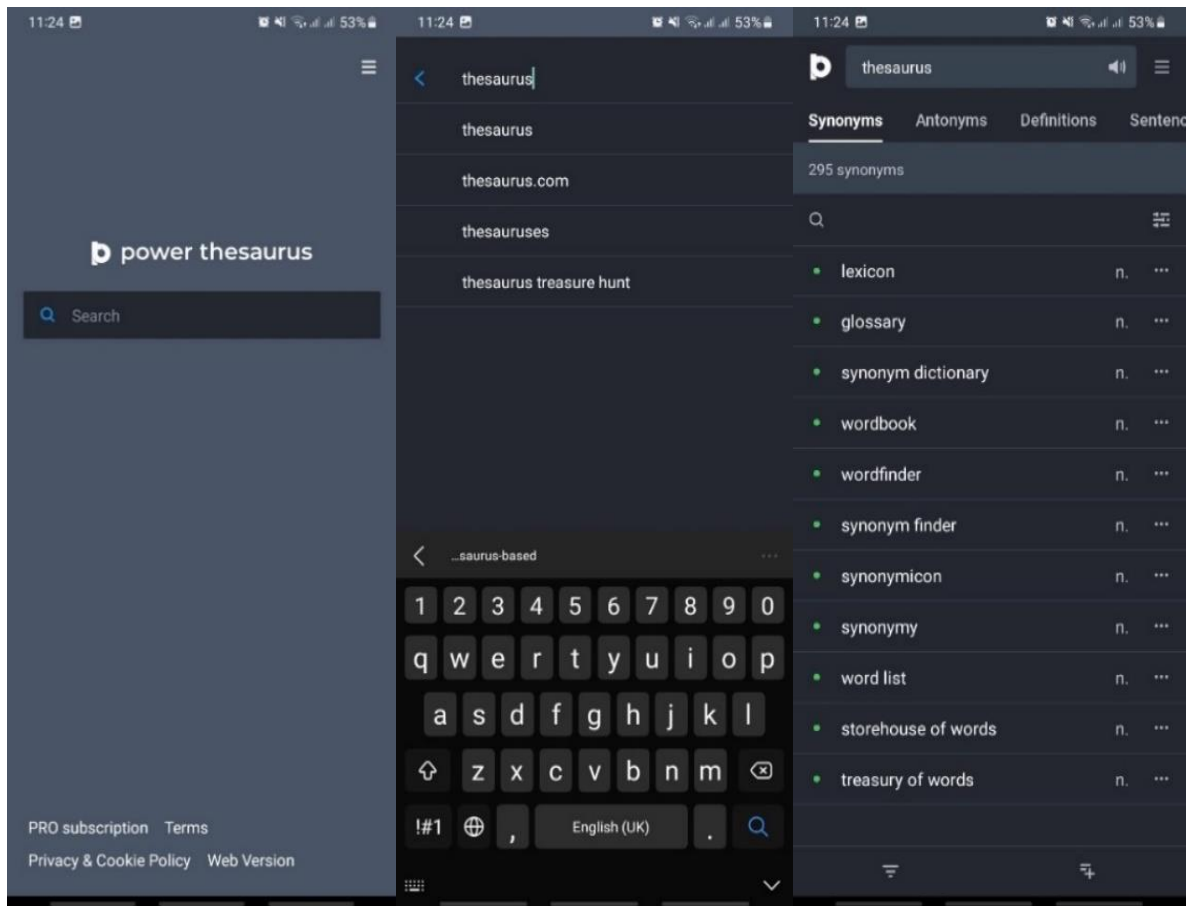
Power Thesaurus' icon and user interface on mobile phone



To look up words' synonyms, the user can enter the word they looking for its synonyms and press the search button. A host of synonyms along with their linguistic information will be displayed immediately as shown in Figure 9.

Figure 9

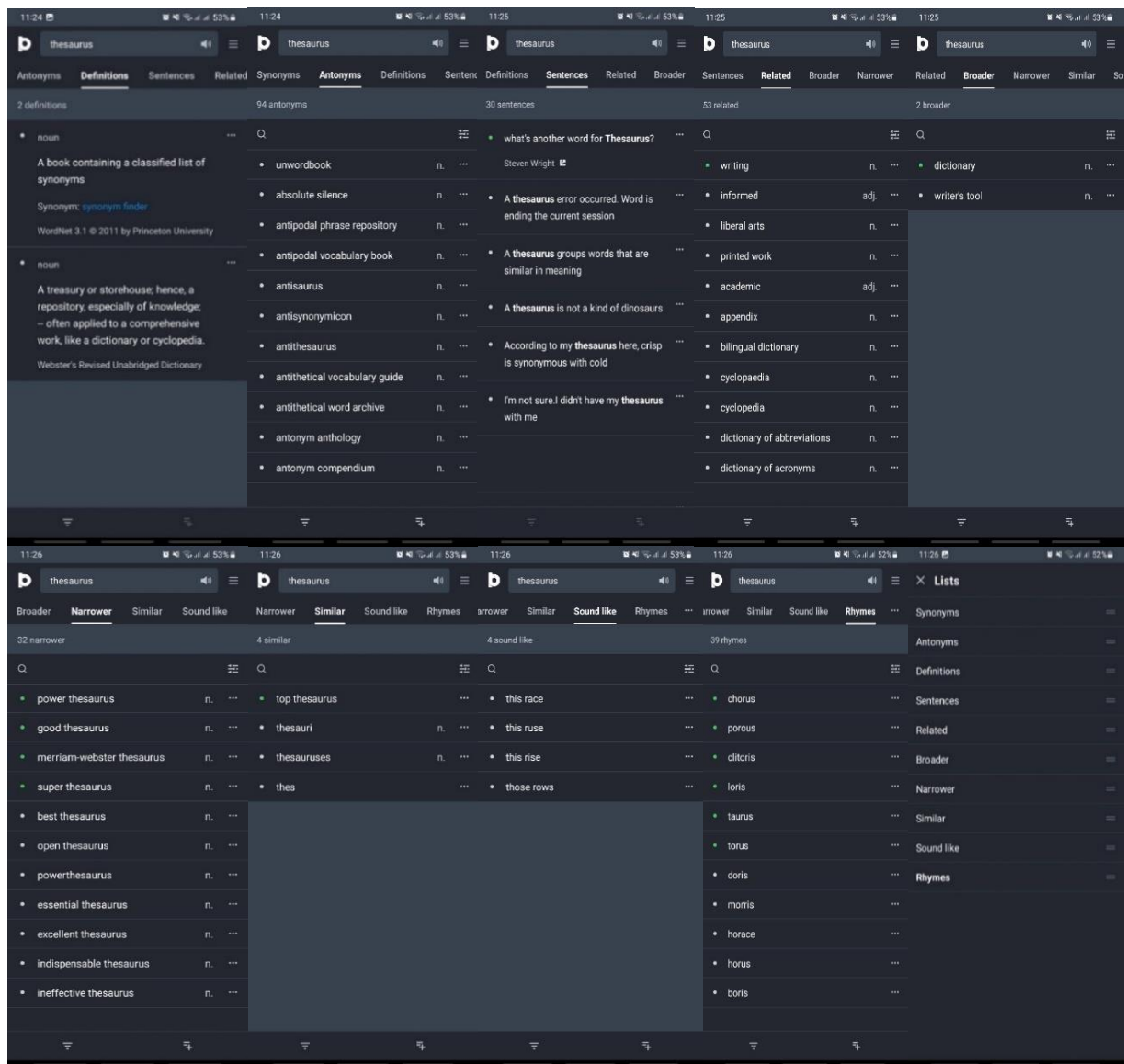
Power Thesaurus' user interface on mobile phone



Not only does Power Thesaurus provide words' synonyms, but it also offers several other information on the words searched. For example, the user can navigate other options like antonyms of the word, their definitions, sample sentences where the words are used (it is here where the pragmatic information is displayed, and it is with this feature where learners are most likely going to find this thesaurus useful for aiding them in writing) shown in Figure 9. below, and many other features (see Figure 10 for all features together).

Figure 10

Features of Power Thesaurus



All in all, this tool can be very helpful for EFL learners when they are in the course of composing academic texts. As Aken (2014) affirmed, it “provides a useful help when writing dialogue. For some words, it provides hundreds of alternatives spread over many pages” para. 1). It was therefore hypothesized in this study that it will help EFL learners enhance the lexical cohesion of their academic writing.

2.10. Definition of synonymy

Synonymy is considered as one of the important aspects of academic vocabulary that helps achieve lexical cohesion in writing. However, there is a noticeable disagreement on an inclusive definition of synonymy in the literature. For example, Pintilii (2022) sees synonymy as merely the paradigmatic semantic relation between two words or more, with a similar meaning, in which each can replace the other. Cruse (2000), on the other hand, argues that the notion of synonymy is far beyond being merely understood as two words that have identical meaning. According to Cruse (2000), “if we interpret synonymy simply as sameness of meaning, then it would appear to be a rather uninteresting relation; if, however, we say that synonyms are words whose semantic similarities are more salient than their differences, then a potential area of interest opens up” (p. 156). It could be inferred from this perspective that there is a continuum where synonymous words are ranging in terms of sameness one from the other. This is proved in Cruse (2000) who distinguishes three degrees of synonymy: absolute, prepositional, and near-synonymy. In summation, synonymy is viewed in this study as the paradigmatic semantic relationship between two words or more that are identical or near to each other in meaning. The notion of meaning continuum where words are regarded synonymous if they're found at any point in that continuum is adopted.

2.11. Synonymy knowledge and use

Synonymy knowledge is found to enhance second-language vocabulary learning (Webb, 2007). Its use is substantially crucial in producing cohesive texts, as far as the lexical cohesion is concerned (Halliday & Hasan, 1976). Moreover, research on synonymy knowledge and use proved that learning words with their synonyms optimizes vocabulary acquisition. Webb's (2007) employed 10 tests to measure five aspects of word knowledge, i.e., orthography, paradigmatic association, syntagmatic association, meaning and form, and

grammatical functions. The aim was to examine the effects of synonymy on word knowledge among 84 Japanese EFL learners and to assess their vocabulary learning. Consequently, it was found that the participants had significantly higher scores for the words that had known synonyms on productive knowledge. Thus, it was concluded that learning synonyms for known words is easier than learning words that do not have known synonyms.

2.12. The importance of synonymy knowledge for EFL learners

Pintilii (2021) shed light on synonymy and called for EFL teachers to be more aware of the helpfulness of its knowledge for learners. The researcher alleged that synonymy is “a significant component of the vocabulary of the language and therefore should be effectively taught to EFL learners in order to make them competent and fluent” (p. 1). They suggested a number of activities that are appropriate to teach this semantic phenomenon. One of the suggested activities was the use of an online platform which offers a huge number of texts and which also offers five versions of the same texts that are written in different words. According to Pintilii (2021), “English teachers can use the great online instructional content platform entitled Newsela, which provides a wide range of texts at five differentiated reading levels” (p. 286). Eventually, this highlights the importance of CALL features in language learning, and indicates that they can be used to teach and learn vocabulary especially synonymy.

2.13. Synonymy in academic writing

The relationship(s) between synonymy knowledge and use and academic writing quality is reported in research. For instance, Hameed and Challob (2022) investigated the use of synonymy as one of the lexical cohesive devices among Iraqi EFL university students' essay writing. They proved with statistics how the use of synonymy as a lexical device contributed in producing well-structured and cohesive essays. Additionally, they reported that the

participants opted for different synonyms and near-synonyms in their essays to achieve the goal of logical cohesion. This supports the idea that synonymy is an important lexical cohesive device that helps achieve text cohesion (Halliday & Hasan, 1976). The researchers reveal that the essays that were written by participants with poor knowledge of synonymy lack cohesion. In the same line, Yen and Hoai (2022) investigated the impact of enhanced synonymy and antonymy use among 29 third-year Thai EFL students on their writing performance. Unlike Hameed and Challob (2022) who employed a qualitative research design, Yen and Hoai (2022) opted for a quasi-experimental design, employed the questionnaires and tests for collecting data, and provided a ten-week experimental course where the participants tackled exercises on synonymy and antonymy. The obtained results prove that the participants improved their writing performance. Positive attitudes from the participants toward using synonyms and antonyms were reported. As such, feedback towards the supplementary exercises of the treatment was positive.

Conclusion

To recapitulate, chapter two aimed at introducing Electronic Dictionaries (ETDs), mainly Electronic Thesaurus Dictionaries (ETDs), and it was focused on “Power Thesaurus”. So far, this tool is seen as a resource that is potentially capable to help EFL learners. The latter can exploit it to look up many semantic, syntactic, and pragmatic aspects of the words when writing academic texts. Navigating the rich history that thesauri are associated with and the efforts that lexicographers have put reveals how scrutiny and thorough are these products. In the first section, the chapter will open with an attempt to define the dictionary in general. Both its types, i.e., printed and electronic will be introduced subsequently. Next in a row comes an account for the advantages and disadvantages of the dictionary. It will be up until the second section that Electronic Thesaurus Dictionaries (ETDs) will be tackled. A brief

history of thesaurus dictionaries where information on the first emergence of thesauri, their evolution over time, and their digitization will follow. The last but one element in this section highlights the importance of thesaurus use, especially for language learners. Eventually, the main ETD “Power Thesaurus” will then be presented as the main tool that the researcher has relied on as the intended research intervention for this study. Last but not least, a section that defines the semantic phenomenon namely Synonymy will wrap-up the chapter. Therein, synonymy knowledge and use for language learners are thoroughly explained. Further still, the importance of knowing this phenomenon for EFL learners is placed at the heart of this section along with the last component, Synonymy in academic writing.

Chapter three

Chapter three: A systematic review of the related literature

Introduction

3.1. Search, filtration, and selection process

3.1.1. Searching

3.1.2. The search process

3.1.3. Inclusion and exclusion criteria

3.2. The literature review

3.2.1. The integration of CALL and MALL in English Language Teaching

3.2.2. Research on the use of EDs in fostering vocabulary acquisition and writing

3.2.3. Bridging the gaps; a synthesis of the reviewed studies

Conclusion

Introduction

At the heart of the many challenges that teaching and learning writing in a second or a foreign language has long ago encountered, expert researchers have placed findings from research on the same at a very high position of interest. For example, Hyland (2004) called writing instructors to let the very act of writing instruction burst from research findings.

MacArthur et al. (2015) noted that

in Europe and in the United States, educators face substantial challenges in meeting the needs of students to master writing in both their native and second languages. At the same time in the United States, the recent Common Core State Standards (2010) require proficient writing across disciplines, such as science, history, and literature. To address the challenges, educators, researchers, and policy makers need to draw on the best available information about writing, its development, and effective instruction for all students (p. 11)

In the same vein and given the importance of drawing from research to assure quality writing instruction and learning, the bottomline of this study is purely derived from research findings. That is to say, it took hold of consulting the literature that is most relevant to its purpose. Ergo, the present chapter is dedicated to systematically reviewing a number of studies on academic writing in relation to academic vocabulary, synonymy (knowledge and use), and not least electronic thesaurus dictionaries. The chapter first begins by illustrating the process of searching, filtering, and selecting the relevant literature that was executed by the researcher. It then delves into the discussion of the scholarly debate on the said issue. Addedly, a synthesis of this discussion is offered and a gap in the literature is identified alongside. Based on that, a resolution, from which the research questions, hypotheses, and methodology are derived, is finally formed.

3.1. Search, filtration, and selection process

3.1.1. The search process

The studies that were consulted for this literature review have gone through a meticulous process of searching, screening, and checking against preset eligibility criteria. The first step was to search a number of keywords on five online databases, namely: Scopus, Google Scholar, ResearchGate, Academia, Semantic Scholar. A number of keywords were used in this process. These included: Academic Writing, Academic Vocabulary, Synonymy, Electronic Dictionaries, Thesaurus. This searching process resulted in finding a host of around 857 journal articles.

3.1.2. The screening process

The next step was to filter the journal articles that the search process resulted in. It first began by screening these articles from titles. This resulted in the exclusion of 576 articles. The remaining 281 articles were further screened from their abstracts and duplicates, and this served to exclude another 228 articles which were deemed irrelevant to this review. Screening from reading the full manuscript resulted in the exclusion of 18 articles. Thus, only 35 articles were included for this review.

3.1.3. Inclusion and exclusion criteria

The selected studies have been limited to those in published form of journal articles that were published in English in peer-reviewed journals and whose date of publication is not older than 1990. Books and book chapters, Conference proceedings, ERIC documents, and unpublished master's theses and doctoral dissertations were not included. This process of selecting the studies to be included and excluded is interchangeably referred to as the eligibility criteria or inclusion/ exclusion criteria (Library, 2024, para. 1). Three criteria are the focus in this stage namely publication, method, and context and participation. The inclusion and exclusion criteria of the selected studies are summarized in the table below:

Table 2

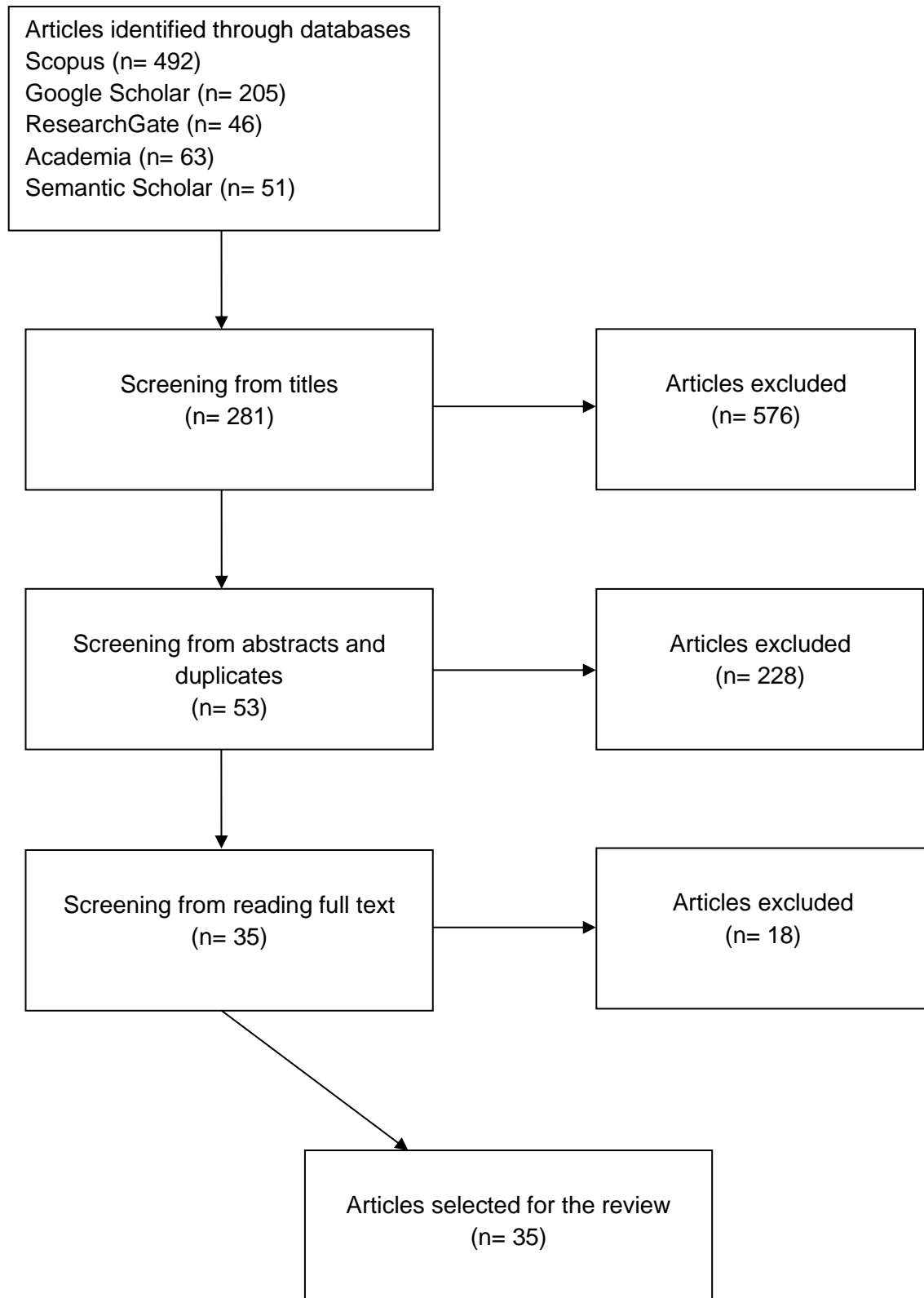
Inclusion and exclusion criteria

Criteria	Included	Excluded	
Publication	<i>Year of publication</i>	From 1990 to 2023	Before 1990
	<i>Publication language</i>	English	Other languages
	<i>Publication index</i>	Scopus, ProQuest, and ERIC databases	Other databases
	<i>Publication type</i>	Journal articles	Other genres
	<i>Review status</i>	Peer-reviewed	Not peer-reviewed
	<i>Topic of study</i>	Electronic dictionaries supported writing	
Method	<i>Study design</i>	Experimental/ quasi-experimental studies/ exploratory studies/ survey studies	Theoretical articles
	<i>Training system</i>	Electronic dictionaries on desktop/ mobile devices	
	<i>Data collection</i>	Studies which measured writing after an electronic dictionary treatment	
Context & participants	<i>Profile data</i>		Missing key details about the context or participants
	<i>Participants</i>	Second/ foreign language learners	
	<i>Reading/ writing acuity</i>		Participants with reading/ writing deficiencies

The rationale behind opting for these criteria was to compensate for the inadequate number of studies that could be directly linked to variables under study. Meanwhile, it was to guide the review and avoid being dragged by the literature. Ultimately, the whole process of collecting the studies for this review is summarized in Figure 11:

Figure 11

The visualization of the Search, Filtration, and Selection process



3.2. The literature review

3.2.1. *The integration of CALL and MALL in English Language Teaching*

As soon as the third millennium had kicked off, CALL was already defined in many works related to ELT as the practice of learning a language with the aid of any computer device. For example, Levy (1997) defined it as “the search for and study of applications of the computer in language teaching and learning” (p. 1). In the same way, Egbert (2005) mentioned that CALL is “learners learning language in any context with, through, and around computer technologies” (p. 4). The two definitions show how Computer-Assisted Language Learning (CALL) was at its early stages limited to computer devices. However, in recent years, and with the emergence of mobile or portable phones, an offshoot of CALL has also emerged which is Mobile-Assisted Language Learning (MALL). Thus, with the advancement of technology in recent years, TELL is now an umbrella term that can be applicable to any device like a Personal Computer, a laptop, a tablet, or a mobile.

Notably, the consulted literature provides evidence on the functionality of TELL, including both CALL and MALL, in language teaching and learning. This includes the teaching of synonymy, academic vocabulary, not least academic writing. In fact, studies that combined some of these variables together are already found in the literature, though scarce. For instance, Loucky (2005) developed a multi-purpose language-learning site that combined an online reading laboratory and with which practice in all four communication skills including writing was integrated. Other CALL features that this website was equipped with have been helpful. These included an online electronic dictionary that the learners could use to look up the meaning of difficult words while reading. Nevertheless, the researcher’s attention is neither focused on the electronic dictionary nor on its possible effects on the four language skills. Still, a chief merit of such a setting is that it will likely

stimulate incidental acquisition of new vocabulary items among EFL learners from the offered input, i.e., the reading material and the online dictionary.

3.2.2. Research on the use of EDs in fostering vocabulary acquisition and writing

Research on the usability of electronic dictionaries and their role in fostering vocabulary acquisition is not exclusively limited to the late stages of CALL era. Rather, evidence from the literature showed a number of studies in different times that investigated dictionary use. According to (Oxford, 1990; Gavriilidou, 2013; Lu & Ai, 2015; Xu, 2016), studies have recognized dictionary use as an important cognitive strategy, which is a factor influencing L2 writing quality (cited in Liu & Yin, 2017). Luo et al. (2017) insisted on the dire need for further research studies on the strategies of using e-dictionaries and their roles in enhancing L2 writing. They called for further research to thoroughly address this issue and asserted that “ED use strategy as a comprehensive construct consisting of multiple strategies should be studied as a whole in students’ L2 writing” (p.137). They also insisted that “due to the indispensable role of EDs, investigations into students’ ED use strategy and its differences resulting from their writing proficiency became urgent” (p. 139). Zheng & Wang (2016), however, discussed EDs’ functionality and identified some of the issues related to their integration in EFL classrooms. They saw them as a double-edged weapon that has merits and demerits. It is in this study, among the reviewed ones, only where the researchers illustrated that EDs can sometimes be distractive and not useful, as well. In fact, some of the direct reasons to this opposing conclusion could have been lack of training on how to use this tool, bad dictionary use habits and strategies as explained by Nesi and Hail (2002). Khrisat and Mahmoud (2013) examined the effect of ten TEFL-oriented features of mobile phones, including the use of e-dictionaries, in the English language classroom on the achievement of forty Saudi EFL students. They also aimed to explore students’ attitudes towards this then-new teaching method. Consequently, slight differences in students’

achievement in general English were found. Nevertheless, it could be due to insufficient time allotted for conducting the study that no significant results were found. Yet, the analysis of the questionnaire showed positive attitudes toward using mobile phones in the classroom.

In the Saudi EFL context, it was recommended in a number of studies to integrate e-dictionaries in reading and writing classes. Ali Al-Khairi (2013) claimed that the lack of exposure to academic vocabulary in books and dictionaries is a problem that Saudi EFL students have to seriously consider in order to master the productive skills. The aforementioned researcher stated that “with the proliferation of online resources, the importance of books is usually underestimated by the students; therefore, it is another problem with Saudi students that they do not use EDs. This is consistent with other studies in the same context that reported on the same issues and suggest similar recommendations. For instance, Hazaea & Abbas (2016) reported that a sample of thirty male Saudi EFL students could improve their skill of breaking the codes of reading texts by using a number of MALL features and tools, including e-dictionaries, on their mobile phones. In the same vein, a causal-comparative mixed-method study that was conducted by Rashid Alamri & Mousa Hakami (2022) investigated and compared perspectives on utilizing e-dictionaries to increase vocabulary learning of 295 Saudi EFL female students. It was reported that Eds’ use accelerated vocabulary comprehension, recall, and retention and that the subjects preferred e-dictionaries over printed dictionaries. The three studies are different in terms of methodology, but the results of each of the three packs up the other supporting the general gist that e-dictionaries can be used as a viable tool to stimulate vocabulary and synonymy acquisition of EFL learners and which in the long run is likely to help them enhance their overall quality of their academic writing.

Nesi and Haili (2002) investigated the habits of using traditional dictionaries by six

groups of international students at a British University. Although the subjects were not enrolled at a program of English, it was the medium of instruction. The researchers report that the subjects relied heavily on their dictionaries to look up words but half of them failed at least once out of five in consulting them. It is also reported that the main problem with the subjects was in selecting appropriate entries and sub-entries. This yielded some insights on the problems that may arise when learners are asked to use dictionaries. It is also worth mentioning that this finding echoes with that of Zheng & Wang (2016). In the Chinese EFL context, Lou & Li (2012) surveyed 415 seniors to gain insights on the diachronic trends of their choice of dictionaries during the different stages of their English learning journey from junior middle school to college. One of the inferences that they concluded with was that e-dictionaries play a significant role in Second Language Acquisition (SLA) and that both teachers and students have to know how to smartly benefit from this tool. In the same context, Luo et al. (2017) revealed that while effective e-dictionary use strategies helped 50 Chinese participants improve the quality of their essays, in general, some with ineffective strategies are said to have no significant improvements in their writing. Although this study did not differ from the others in terms of research methodology and context, the findings highlighted the importance of e-dictionary use strategies and highlighted the role that they can play in EFL learning. Rezaei and Davoudi (2016) explored the influence of electronic and hard copies of dictionaries on 70 Iranian EFL college students' vocabulary learning and retention. It was found that the group that used e-dictionaries outperformed the other one that used the printed dictionary. The findings also indicated that EDs could improve vocabulary learning. Boonmoh (2011) reported how 39 undergraduate Thai-speaking EFL students used their Pocket Electronic Dictionaries (PEDs) for reading comprehension of an English news article. It was found that participants who lack effective reading strategies relied heavily on the PEDs to extract the meaning of the difficult words. This indicates a

lack of academic vocabulary knowledge that does not only hinder academic reading but also results in a low academic writing skills as both are interwoven cognitive abilities. This was suggested in Coxhead and Byrd (2007) who mentioned that “academic writing does not exist as a task on its own but is inextricably linked to the reading of academic texts” (p. 133). Tananuraksakul (2015) investigated the effect of 73 Thai EFL students’ use of e-dictionaries on their learning autonomy. Evidence from the statistics confirmed that e-dictionaries are a useful tool that helps learners in their writing assignments. Jiménez (2023) found that among 48 Costa Rican EFL students, some didn’t know all the types of dictionaries, 44 (91.7%) of them favored e-versions of the dictionaries over their hard copies, and little training on using these dictionaries was allotted for the student.

In the Algerian setting, Benzitouni (2016) employed a quasi-experimental study to examine the effects of using dictionaries on sixty Algerian EFL students’ in-depth vocabulary knowledge. Statistically significant improvements were found and it was concluded that using dictionaries, especially electronic, as a vocabulary learning tool is functional. Finally, Gao & Liu (2018) examined the distinctive features of two English learners’ thesauri by adopting the valency theoretical framework. They supported the study by evidence from learner corpus and assessed the usefulness of the two thesauri in learners’ writing empirically. They concluded that “on the whole, they are useful reference works, providing rich syntactic, semantic, and pragmatic information. For example, learners’ thesauri offer users a range of synonyms and syntactic patterns to choose from” (Gao & Liu, 2018).

3.2.3. Bridging the gaps; a synthesis of the reviewed studies

In a nutshell, the reviewed studies on the integration of electronic dictionaries in teaching and learning writing helped explore this process. It mainly empowered the exploration of EDs impact on vocabulary acquisition (including synonyms) in relation to the overall

writing skill. It was found that CALL and its mobile counterpart, MALL, play a significant role in language learning, including writing instruction and learning (Al-Kadi, 2018; Levy, 1997; Egbert, 2005; Zheng & Wang, 2016). Such technological luxury introduced to ELT some of the most functional tools that do not only promote incidental language acquisition but also the underlying skills that are compulsory to use it in communication effectively. These tools include computers (Loucky, 2005), mobiles (Ali Al-Khairi, 2013) and electronic dictionaries (Loucky, 2005), which were found beneficial in teaching the four language skills, mainly reading and writing. In the literature, it is suggested that EDs can be a valuable tool for EFL learners to improve reading comprehension as they help them decode unfamiliar words (Hazaea & Abbas, 2016; Boonmoh, 2011). They can also foster vocabulary acquisition, which includes academic vocabulary and synonyms (Ali Al-Khairi, 2013; Rashid Alamri & Mousa Hakami, 2022; Nesi and Hail, 2002; Lou & Li, 2012; Rezaei and Davoudi, 2016). Furthermore, EDs can potentially contribute to the optimization of the writing instruction and learning process as they help students acquire and develop better writing skills. This is particularly true when effective dictionary use strategies are present (Loucky, 2005; Liu & Yin, 2017; Khrisat and Mahmoud, 2013; Luo et al., 2017). However, it was evident that research on the usability of EDs in writing instruction and learning is scarce (Luo et al., 2017), let alone that on Thesauri in particular which almost does not even exist.

Insofar as these studies are concerned, it was revealed that EDs are a viable solution to compensate for the lack of academic vocabulary due to which many EFL learners are not well-prepared or unable to produce cohesive pieces of academic prose. Although researchers worked on the same issue by employing different methodologies, there is a room for criticism. First, in the majority of these studies, data is gathered using students' questionnaires which does not always yield enough or accurate data on the perceptions and

attitudes. Observation or interviews could have been opted for, alternatively. In that regard, two data collection instruments namely the test, the questionnaire will be exploited in this study as far as the triangulation is concerned to assure that the data gathered will be sound. Addedly, the absence of triangulation places a number of the consulted studies on the brink of subjective bias from the part of the researchers, and thus, data might be considered unreliable. Still further, there is a question that can possibly strike in the mind of the reader of these studies which is: why would all of them solely focus on e-dictionaries in particular since they are, i.e., EDs, divided into types, themselves. For instance, in their book of academic writing, Jordan (2003) recommends the use of thesaurus dictionary for students to support them in writing-based tasks. Hence, a knowledge gap that concerns the integration of electronic thesaurus dictionaries and thesaurus-based activities in fostering synonymy and incidental vocabulary acquisition in the body of knowledge is spotted. Upon that, the following research questions were raised:

RQ1: To what extent do electronic thesaurus-assisted writing activities yield more cohesive Academic Writing?

RQ2: Do thesaurus-assisted writing activities improve lexical cohesion in M1 students' academic writing?

RQ3: What are the attitudes and perceptions of M1 students towards the use of electronic thesauri as a tool to improve lexical cohesion in their academic writing?

As such, the aims of study were set. In general, this study aims to explore the influence of integrating electronic thesaurus dictionaries in academic writing activities. More specifically, the aims of this study will be as follows:

- Measure the extent to which electronic thesaurus-assisted writing activities improve synonymy use among Algerian M1 students' Academic Writing.
- Explore possible effects of electronic-assisted writing activities on overall lexical

cohesion in Algerian M1 students' academic writing.

- Explore M1 students' attitudes and perceptions towards the use of electronic thesauri dictionaries as an assisting tool that can leverage lexical cohesion in their academic writing.

Conclusion

This chapter reviewed the most relevant studies that were found on the variables being studied. The review process began by consulting five main research databases with five keywords being targeted. The results of the searching stage were subjected to further filtration in regard to some criteria for inclusion and exclusion. These criteria included screening from titles, screening from abstracts and duplicates, and screening from reading the full article. In the last stage, a total of 98 peer-reviewed journal articles were selected for review. An exploration of the application of CALL and its counterpart MALL in English Language Teaching was made. The review revealed that the use of electronic dictionaries in writing instruction specifically and language learning in general was found in a number of contexts (Algeria, Saudi Arabia, China, UK, Thailand, Iran) beneficial. Such aiding tools could help students acquire vocabulary including synonymy and made language use and production easier. A positive correlation between reading comprehension and written production in relation to ED use was evident in the literature. However, it was also evident that more research on the use of EDs in writing is needed. In fact, research on the use of electronic thesaurus dictionaries to help students improve the different aspects of their academic writing does not even exist. The latter aspects could include lexical cohesion as ETDs will hypothetically allow students access a host of synonyms and antonyms that they need to achieve it. A knowledge gap was identified by spotting the absence of such research in the existing literature. Based on that, it was hypothesized that: (1) electronic thesaurus-assisted writing activities will improve synonymy use in M1 students' Academic

Writing; (2) electronic thesaurus-assisted writing activities will improve overall lexical cohesion in Algerian M1 students' academic writing; and that (3) M1 students who will use electronic thesauri dictionaries to explore synonyms while writing will exhibit positive perceived ease of use and higher positive attitudes towards the usefulness of this instrument. The next chapter will be devoted to fieldwork where the research methodology used to test these hypotheses will be under scrutiny.

Practical part

Chapter four

Chapter four: Research methodology

Introduction

4.1. Research methodology: Theoretical background

4.1.1. The research paradigm

4.1.2. The research approach

4.1.3. The research design

4.1.4. Data collection methods

4.1.5. Data analysis procedures

4.2. Research methodology for this study: Choices and rationale

4.2.1. Research paradigm

4.2.2. Research approach

4.2.3. Research design

4.2.4. Data collection

4.2.4.1. Synonymy knowledge and use test

4.2.4.2. Structure and aim

4.2.4.3. Piloting and validation

4.2.4.4. The questionnaires

4.2.4.5. Structure and aim

4.2.4.6. Piloting and validation

4.2.5. Data analysis method and procedure

4.2.5.1. Quantitative data analysis

4.2.5.1. Qualitative data analysis

2.2.6. Population and sampling technique

4.2.7. Procedure

Conclusion

“It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts.”

— Sir Arthur Conan Doyle, Sherlock Holmes

Introduction

Carrying out research is largely dependent on the researcher's mastery of the underlying research methods and methodologies. As Kothari (2011) advises, “researchers also need to understand the assumptions underlying various techniques and they need to know the criteria by which they can decide that certain techniques and procedures will be applicable to certain problems and others will not” (p. 8). Since conducting it derives from the need for making new discoveries, attaining higher degrees and respectability in society, and all the other relevant desires (Mehiri, 2017), it is a process that needs to be actively managed, and it requires the researcher to be well-prepared, organized, and strategic in their preliminary planning (Chelli, 2021). Hence, this chapter will be subsumed by the definition of major key terms in research.

Thus far in this present chapter, the established methodology for this study will be demystified. Adding up to the previous chapters which function as the theoretical framework for the study, this chapter takes hold of reporting on the fieldwork that has been made to conduct the study. In brief, it attempts to answer the questions: How does the researcher perceive major terms in research methods and methodology? Which school of thought have they followed in planning for this research? What research paradigm, approach, and design have been used to collect and analyze the data? How has the data been gathered? and under which context and procedures? And finally, how has the data been analyzed?

To answer the aforementioned questions, the chapter begins by drawing from the

literature scrutiny definitions of research paradigm, approach, and design. As well, data collection methods and analysis procedures are to be meticulously described. These are then revisited to contextualize them within the realm of this study. By demonstrating these main elements of the research methodology followed, this chapter will contribute to the overall understanding of the readership of this work.

4.1. Research methodology: Theoretical background

4.1.1. The research paradigm

Like in any other task of knowledge construction, research usually stems from the way individuals perceive the world. From its very philosophical underpinnings to the mere concrete acts of data collection and analysis, it meanwhile reflects the way people understand the actual practice of conducting research as a whole. This set of practices and beliefs about research, or what is generally known as a research paradigm, “reflects basic assumptions about: (1) the purpose of research and what it should be trying to find out; (2) the nature of the social world (‘ontology’); and (3) the ways of obtaining knowledge about the social world (‘epistemology’)” (Denscombe, 2021, p. 38). It is for that reason that a number of scholars insisted on defining paradigms in research. For example, Creswell and Creswell (2023) applauded that although these “philosophical ideas remain largely hidden in research (Slife & Williams, 1995), they still influence the practice of research and need to be identified” (p. 54). The same is exactly maintained by Paltridge and Phakiti (2018) who stated that

A researcher’s adopted paradigm is not something that is always boldly stated or labelled by the researcher. Researchers hardly ever say ‘I am a postpositivist’ or ‘This research takes a constructivist perspective’ in their published research. However, we can speculate and infer a researcher’s paradigm by observing the principles they follow and how they go about their pursuit of knowledge (p. 27)

Ergo in this study, a theoretical background on research paradigm is to be established by the forthcoming paragraphs.

It has been noticed that there is a tacit agreement among scholars on the definition of research paradigm in research methodology books. For instance, McKinley and Rose (2020) defined it as “the philosophy supporting the knowledge or reality a researcher uses to understand a phenomenon” (p. 2). In near terms, it is viewed in Fraenkel and Wallen (2009) as the

basic set of beliefs or assumptions that guide the way researcher approaches their investigations. They are related to the views they hold concerning the nature of reality, the relationship of the researcher to that which they are studying, the role of values in a study, and the process of research itself (p. 429)

Interestingly, one can notice that a research paradigm is envisioned, in both definitions, as a fundamental belief system that shapes the researchers’ understanding of the research subject and guides them in their approach to the investigation. A third definition is found in Paltridge and Phakiti (2018) who sustained that “a research paradigm is the underlying philosophical view of what constitutes knowledge or reality as the researcher seeks to gain an understanding of a particular topic” (p. 27). On educational research, Mertens (2010) suggested a thorough definition of research paradigm as “a way of looking at the world. It is composed of certain philosophical assumptions that guide and direct thinking and action” (p. 7). Thus, one can infer that a research paradigm is, in plain English, the philosophy from which a researcher embarks the reasoning about all aspects and stages of a research study.

Unless enclosed with examples, solely defining a paradigm is inadequate to fully understand the host of nuances due to which research is deemed complex. Therefore, previewing some sample paradigms is inevitable for researchers, especially novice ones.

McKinley and Rose (2020) listed the major research paradigms and reported that “common examples or research paradigms in applied linguistics research are positivism, post positivism, and interpretivism; further examples are critical inquiry, pragmatism, and participatory paradigm, among others” (p. 3). In fact, what matters the most for this study is the pragmatist paradigm. The latter has influenced L2 education at the level of research methods (Hinkel, 2007). In there, “pragmatism advocates a “scientific orientation” that avoids commitment to particular epistemologies, philosophies, or research methods” (Hinkel, 2007, p. 808). This flexibility of pragmatism allows for wide openness to all possible research methods, data collection and analysis tools and procedures. Hinkel, 2007, went on to mention that

“encouraging researchers to choose freely any research methods and techniques that meet their needs, Creswell (2009) notes that “pragmatism opens the door to multiple methods, different worldviews, and different assumptions, as well as different forms of data collection and analysis” (p. 11)” (p. 808).

In Depoy’s (2016) words, “that is to say, rather than taking a position on the nature of knowledge itself, pragmatism is turned to the selection of methodological tools that are most purposive in solving a knowledge problem. Thus, concepts such as “truth” and “reality” are relative and purposive” (p. 47).

4.1.2. The research approach

Another crucial step in conducting research is the selection of a research approach. The latter is “the generic term given to the manner in which a researcher engages with a study as a whole” (McKinley & Rose, 2020, p. 3). More specifically, Creswell and Creswell (2023) define research approaches as the “plans and the procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis” (2018,

p.3). From this juncture, it could be deduced that a research approach helps inform decisions about how to collect data, by which means to do it, how to analyze it, and with which methods or procedures. McKinley and Rose (2020) also alleged that research approach “takes a macro-perspective of research methodology and incorporates both the overall methodological design of a study, the methods used for data collection and for data analysis” (p. 3). In that way, “the research approach used tells something of how the researcher views the world” (Anderson & Arsenault, 2005, p. 15).

One might be wondering what would a research paradigm look like in reality. McKinley and Rose (2020) answer that question and explains that “in reality, an approach to research might be far more complex depending on the needs of the research questions; nevertheless, the chosen approach will aim to capture this complexity” (p. 3). That is to say that research does not always come in one-size that fits all research situations. Rather, there is a host of different approaches and methods that researchers might merge to successfully collect and analyze data, and which secure an answer to the research questions. These approaches include the main common ones known as qualitative, quantitative, and mixed-methods approach. To conclude, McKinley and Rose (2020) gave a crude example on these approaches as “some researchers may state that they are taking a quantitative approach to research, which might then inform their choice of design (e.g. experimental or survey), their choice of data collection method (e.g. tests or questionnaires), and data analysis (e.g. statistical tests or modelling)” (p. 3).

4.1.3. The research design

Deciding about the research paradigm and approach consequently informs decision on the choice of the research design to be employed. The latter “refers to the methodological structure of a study” (Rose et al., 2019, p. 2), and is a “type of inquiry within qualitative,

quantitative, and mixed methods approaches that provides specific direction for procedures in a research study” (Creswell and Creswell, 2023, p. 60). Within the research process, selecting a research design is placed right after tentatively reviewing the literature. Creswell and Creswell (2023) claimed that “after having decided on a qualitative, quantitative, or mixed methods approach and after conducting a preliminary literature review and deciding on a format for a proposal, the next step in the process is to design or plan the study” (p. 183). This postulate implies that a research design is the plan of subsequent actions that a researcher will make after the literature review, and which will yield answers to the research questions. Examples of these are illustrated in Creswell and Creswell (2023, p. 60) as follows

Figure 12

Research designs that are frequently used in the social sciences

Table 1.2 Alternative Research Designs		
Quantitative	Qualitative	Mixed Methods
<ul style="list-style-type: none"> • Experimental designs • Nonexperimental designs, such as surveys • Longitudinal designs 	<ul style="list-style-type: none"> • Narrative research • Phenomenology • Grounded theory • Ethnographies • Case study 	<ul style="list-style-type: none"> • Convergent • Explanatory sequential • Exploratory sequential • Complex designs with embedded core designs

Note. Adapted from (Creswell & Creswell, 2023, p. 60)

It should be noted, however, that a research design should reflect and correspond with prior choices such as the paradigm and the approach chosen. That is to say that within the research report, “research design section should be used to represent the epistemological, conceptual foundations, and assumptions of the research paradigm chosen and should contain citations of authors who have defined the paradigm, thus increasing the validity of the design” (Mackey & Gass 2022, p. 435). This nature of the research design proves its importance in research as

the plan which the researcher undergoes to in order not for them to make any decisions or procedures that can make the already chosen paradigm or approach deemed irrelevant. A research design then “acts as a blueprint within which to populate the content of a research project. Thus, the general principles underlying this structure are retained across research projects” (McKinley & Rose, 2020, pp. 3-4).

4.1.4. Data collection methods

Once a research design is being tailored, thinking of viable data collection method and procedure becomes compulsory. Data collection is focal to the success of the study, and to Macky and Gass (2022), “findings in second language research are highly dependent on the data collection measures (often known as data elicitation) used” (p. 79). As a critical stage in the research process, data elicitation is defined by Creswell and Creswell (2023) as “setting the boundaries for the study through sampling and recruitment; collecting information through unstructured or semi-structured observations and interviews, documents, and visual materials; as well as establishing the protocol for recording information”. (p. 301). However, it is in fact not exclusively limited to the aforementioned data elicitation tools solely that data can be gathered. Rather, a host of instruments can be exploited to attain the required data. In that same vein, Mackey and Gass (2022) argues that “there is no single prescribed elicitation measure, nor is there a “right” or “wrong” elicitation measure, although many research paradigms have common measures associated with them” (p. 79). For example, it is generally taken for granted that survey research depends often on questionnaires. In essence, it is the nature of the research problem under study and the research questions which stems from it that determines what data gathering tools to use. As Macky & Gass (2022) affirms “the choice of one measure over another is highly dependent on the research question asked and may also be related to the theoretical framework within which research is conducted” (p. 79).

4.1.5. Data analysis procedures

Data analysis phase should be placed at a higher level of importance, and ought to be given a larger portion of the time allocated for conducting the research. At this level, data that has been collected is being subjected to scrutiny processes of critical analysis for the sake of the ultimate purpose of unveiling the answers to the research question(s) raised. It is at this stage where preliminary findings of the study will come to see light, and there remains only reporting them in the final written manuscript with a thorough discussion and concluding remarks of the researcher's own. Having said that, it can be deduced that the way this process is done depends largely on the type of data at hand (descriptive, quantitative, qualitative or attitudinal), and as such, on the way the researcher wants to deliver it to potential readership (Kumar, 2011). Furthermore, it could be also inferred that qualitative and quantitative data are viewed and treated differently in the analysis process. Kumar (2011) explains that

in quantitative research the main emphasis in data analysis is to decide how researchers are going to analyze information obtained in response to each question that they asked of the respondents. In qualitative research the focus is on what should be the basis of analysis of the information obtained; that is, is it contents, discourse, narrative or event analysis?" (p. 254).

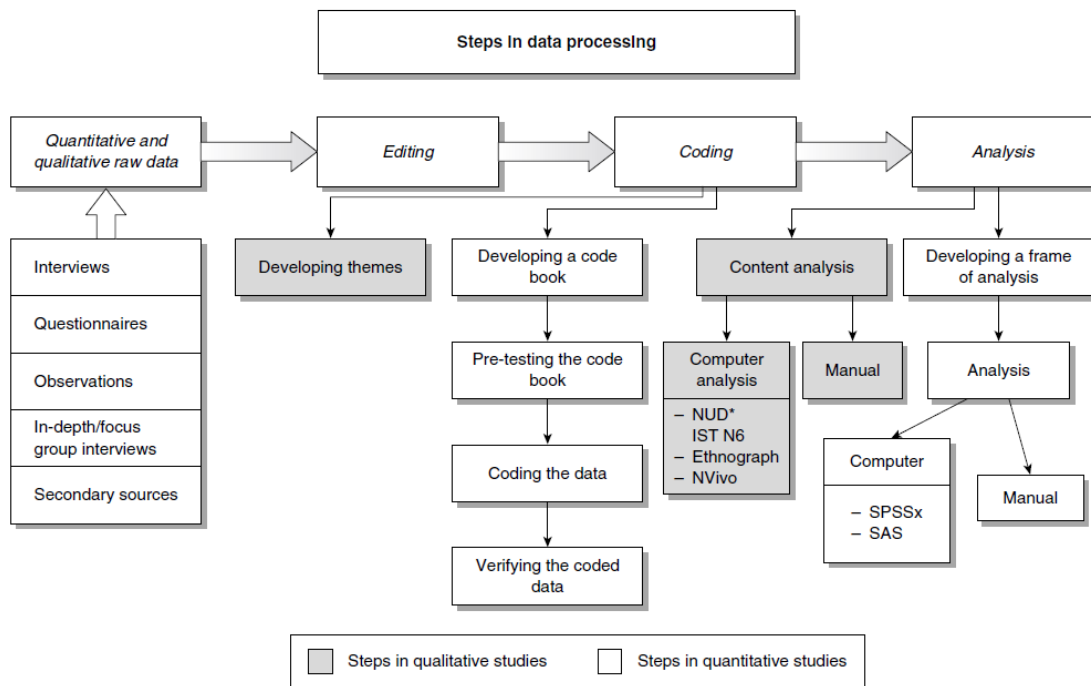
It is thus possible to say that while in qualitative data analysis the focus is on "what to analyze", it on the "how to analyze" with the quantitative analysis of data. Whereas attention in the former is often on emerging themes, patterns, and meanings, answering the predetermined research questions is the centre in the latter.

Nowadays, data analysis has become easier with the advanced technologies and computer devices. Quantitative data analysis is largely dependent on statistic rules and equations of analysis found on software like IBM-SPSS software backage, R, STATA, SAS,

Matlab, Python, Excel, etc. Meanwhile, other software that could process qualitative data include MaxQDA, Taguette, NVivo, Transana, Weft QDA, Dedoose, QDA Minor, Quirkos, Hyper RESEARCH, etc. In this stage, researchers should follow the steps highlighted below:

Figure 13

Steps in data processing



Note. Adapted from Kumar (2011, p. 254).

As shown in Figure 12, three main phases that data analysis process to go through namely editing, coding, and finally analysis. In the one hand, “data analysis strategies for quantitative data are generally statistical in nature and the choice of the appropriate statistic is based on the purpose of the research, the design of the study, and the characteristics of the data themselves” (Mertens, 2010, p. 447). While in the other hand, “qualitative data analysis can be started even before the interview or observation notes are collected. Researchers can begin writing their thoughts and feelings in a journaling format and use that as part of the data

analysis” (Mertens, 2010, p. 447). It could finally be concluded that “interpretation of both types of data requires sensitivity to cultural issues” (Mertens, 2010, p. 447).

4.2. Research methodology for this study: Choices and rationale

4.2.1. Research paradigm

The Pragmatist approach is hereby adopted due to its flexibility, focus on answering the research questions, and its tendency to solve the research problem. These also lead scholars like Depoy (2016) to describe it as “unparadigm”. To them, this status of “philosophical unparadigm, the purposive choice of methodology, including mixed methods, is most desirable” (Depoy, 2016, p. 47). Thus, this paradigm “underpins the rise of “mixed methods” research that is oriented toward solving practical educational problems in real-world educational institutions (Greene, 2007 cited in Hinkel, 2007, p. 808), and it is chosen for these reasons. In other words, since this study requires a mixed-method approach to data collection to obtain both the qualitative data, i.e., students’ academic writing and quantitative data, i.e., synonymy knowledge, pragmatism is the point of departure for this study. Selecting this paradigm based on the nature of the research is already justified in Kumar (2011) who pithily noted that “it is the purpose for which a research activity is undertaken that should determine the mode of enquiry, hence the paradigm. To indiscriminately apply one approach to all the research problems can be misleading and inappropriate (p. 14). Meanwhile, the rationale behind opting for this paradigm is because it is “problem-oriented and maintains that a research method be chosen according to its effectiveness in answering the research question” (McKinley & Rose, 2020, p. 3). Overall, as stated in the literature review section, the research gap (knowledge gap) that was identified and the research questions that were raised required this paradigm to be employed as it best suits their exploratory nature.

4.2.2. Research approach

In compliance to the pragmatist research paradigm, this study employed a mixed-methods research approach to data collection and analysis. Research approaches are the road map that the researcher follows in collecting and analyzing data. They are according to Creswell (2014) “the plans and the procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation” (p. 3). This plan usually falls into one of “three core research approaches, which are often discussed in the literature: the quantitative approach, the qualitative approach, and the mixed-methods approach” (Athmani, 2023, p. 68). These three approaches are the most dominant in the context of educational research. According to Athmani (2023), research approaches are often “bound to the research paradigms ordered respectively” (Athmani, 2023, p. 68). The mixed-methods approach is “an eclectic one, combining both qualitative and quantitative data” (Khenat, 2023, p. 82). Moreover, the mixed-methods approach allows for “integrating the two forms of data, and using distinct designs that may involve philosophical assumptions and theoretical frameworks” (Creswell, 2014, p.4). This approach will allow for implementing the appropriate design that empowers collecting quantitative and qualitative data on students’ synonymy knowledge and use simultaneously. A case study on a small sample of 16 students will be implemented. According to Yin (2003 cited in Bekrar, 2020, p. 31), case study is an empirical inquiry that allows for investigation of a contemporary phenomenon within its real-life context when the boundaries between the phenomenon and the context are not clearly evident and in which multiple sources of evidence are used. It should be noted, however, that case study is chosen because generalizing the findings on the whole master one population is not among the aims of this study.

4.2.3. Research design

A mixture of convergent-parallel design with a static-group comparison were employed in this study. Since it stemmed from a pragmatist paradigm and followed a mixed-method approach to data collection, a quasi-experimental design was selected. The synonymy knowledge and use test with its two parts and the questionnaire were used to attain data on the possible effects of Power Thesaurus on Master one students' synonymy use in academic writing. To unpack this further, the convergent parallel design is opted for since the nature of the study necessitated the collection of data both qualitative and quantitative simultaneously at a posttest-only measurement. By the quantitative data, we are referring to the students' knowledge of synonyms that is measured in the first section of the test. The qualitative data is their use of synonyms in the written essays. Data was gathered from two independent groups, control and experimental, that were established prior to the experiment. This data converges together to contribute to answering the same set of research questions. It should be noted that the timing of the treatment (posttest only) does not negate the convergent-parallel nature. Meanwhile, the static-group comparison was executed and the treatment (Power Thesaurus) was used by the experimental group during the writing test to look up words' synonyms and how they are used in different contexts. Then, they were posttested (they wrote the composition). Another group was recruited as a control group and were posttested (took the same test as the experimental group except that they were not asked to use the thesaurus).

4.2.4. Data collection

4.2.4.1. The test A two-tasks test is used for collecting the data in this study to: (1) attain much-needed information on M1 students' synonymy knowledge, and (2) elicit data on the way they use synonyms as one way to construct text connectedness, i. e., lexical cohesion.

4.2.4.2. Structure and aim This first section (see Appendix B) is devoted to gathering quantitative data. A fill-in-the-gap table is designed to quantitatively assess the participants' synonymy knowledge. This table combined forty academic vocabulary items that were adapted from Gardner and Davies' (2013) list of academic vocabulary (AVL). The list is derived from a 120-million-word academic subcorpus of the 425-million-word Corpus of Contemporary American English (COCA; Davies 2012 cited in Gardner and Davies, 2013). Participants were required to provide as many synonyms, to these academic vocabulary items, as they can. The items were both carefully and purposefully chosen. Prior to designing the test, the researcher thoroughly verified the academic writing course materials and made sure to choose from the AVL only the words that appeared thereof. Among the 500 words found in the AVL, ten verbs, ten nouns, ten adjectives, and ten adverbs, which are the most frequently used in the ten courses oriented for Master one students of Sciences of Language at Mohamed Kheider University of Biskra, were chosen. The participants have been briefed that this section is 20 minutes time-bound.

Section two (see Appendix B) is devoted to gathering qualitative data. Therein, a short writing prompt asking participants to write a well-structured composition on a specific topic using a set of academic vocabulary and their synonyms is given. This section will be analyzed to see how the use of synonyms and variety of vocabulary can achieve lexical cohesion and enhance overall quality of writing.

4.2.4.3. Piloting and validation The piloting of the test took place at the division of English on November 2023. Five Master one students of Sciences of Language stream were selected to sit for it during their Applied Linguistics tutorial session and they were given an hour and a half to finish it. Based on their feedback on the test, some adjustments were made. These included reducing the number of words in section one which test takers complained

about, as well as setting the exact timing for the two sections. It should be noted that among the five, one student's answer was excluded and has not been considered as they were found using the mobile phone to do the first section.

The validation of this test has also been done during February 2024. A draft of test was sent to three six full-time EFL university teachers from three different Algerian universities. Feedback received from these expert researchers were taken into account and the final version was generated accordingly. Finally, it is worth mentioning that while some of these teachers provided the researcher with a written validation form and an opinionnaire, and which were sent to them enclosed with the test (see appendix E) so they could fill them in, others apologized for not having sufficient time to make and send these documents but did however provide the researcher with their feedback via email.

4.2.4.4. The questionnaires To collect the participants' perceived ease of Power Thesaurus use and its perceived usefulness in assisting their academic writing of argumentative essays, an online self-reported questionnaire on Google Form was designed and administered. This questionnaire included a number of close-ended questions and Likert-scale items as explained in the next section.

4.2.4.5. Structure and aim The online questionnaire (see Appendix C) comprises six short sections. It opens with a cover interface where the purpose of the questionnaire is stated and the researcher's contact information are provided. The second section displays a brief informed consent for the participants where they are reminded that they have to be over the legal age to take part of the study and where they reminded that they can withdraw from the study if they wish to. Next comes a section to collect general information on participants' profile and general information about their linguistic and educational background. The fourth section includes two questions on the participants' general attitudes towards using electronic

thesauri. Another set of five items to gather data on participants' perceived ease of electronic thesauri use is in the fifth section. Finally, the sixth is devoted to gathering information on participants' perceived usefulness of using electronic thesauri. In brief, the aim with administering this instrument was to attain information on the participants' perceived ease of Electronic Thesaurus use and their perceived usefulness of it in assisting their academic writing of argumentative essays based on what they experienced in the thesaurus-assisted writing test.

4.2.4.6. Piloting and validation The questionnaire has been piloted with two students from the same population. Its face validity was first checked by the supervisor of this thesis (Dr. Moustafa AMRATE). To avoid any conflict of interest or subjective bias, it was then sent to another teacher from the division of English at Biskra University (Ms. Kenza MERGHMI) for further face validity check. To ensure it is reliable, a Cronbach's alpha test of internal consistency was run on IBM-SPSS V22.0 software package.

4.2.5. Data analysis method and procedure

4.2.5.1. Quantitative data analysis The quantitative data analysis obtained from the first section of the test "Synonymy Knowledge Test" was tabulated and cleaned on Microsoft Excell for quantitative analysis using a coding scheme (see code book on appendix F) as shown in Figure 14.

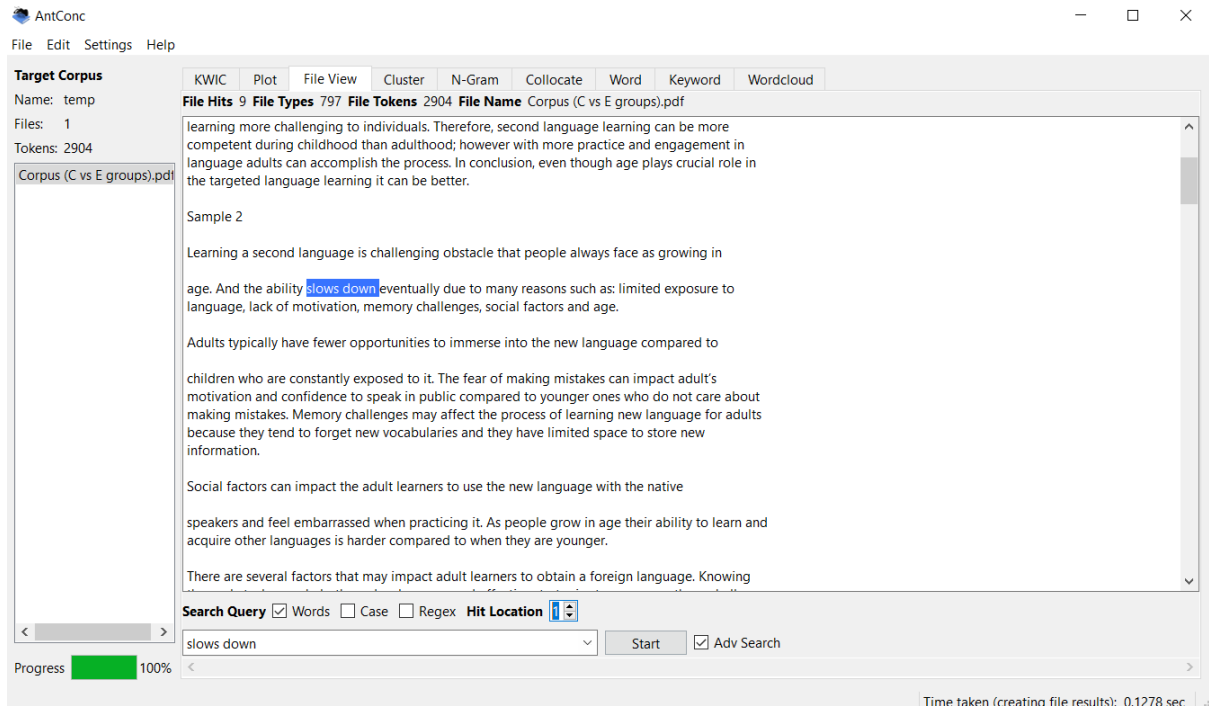
Figure 14

Quantitative data tabulation, cleaning, and coding

	Participant	Reduce	Provide	Improve	Inform	Achieve	Examine	Yield	Involve	Note	Enhance	Significance	Function	Impact	Feature	Researcher
S1	1	TTF	T	TF	TI	T	0	0	0	0	TTF	0	0	0	0	0
S2	2	T	TT	T	T	TF	TTT	F	TF	T	F	F	F	T	F	TF
S3	3	TFFF	T	TTF	T	TF	TTTT	FFF	TTF	TT	TTF	TT	TF	TT	T	0
S4	4	0	T	TF	T	F	TT	0	0	0	T	F	0	F	0	0
S5	5	TF	TF	TF	TF	F	TF	F	F	F	TT	FF	F	TT	T	T
S6	6	TF	T	T	F	FF	FF	T	FF	F	F	F	F	T	TF	FF
S7	7	TTF	TF	TT	FF	F	F	T	FF	F	TF	T	T	TT	TF	F
S8	8	TTF	T	TT	TF	F	0	0	TT	0	T	T	TTF	TT	T	T
S1	16	TFFF	TFFF	TF	F	T	TT	0	F	F	TF	0	TF	TF	F	T
S2	17	TF	0	TT	TF	FFF	TF	F	F	TT	TT	F	0	T	T	0
S3	18	TF	T	F	F	F	TTT	FF	F	F	T	T	T	FF	TF	F
S4	19	TFFF	TF	TTTF	TFP	FF	TTTT	FFF	FF	T	FFF	T	TF	TT	T	F
S5	20	TF	T	F	F	F	TTT	FFF	F	F	T	T	T	FF	TF	F
S6	21	T	FF	TT	TFP	FF	TT	0	F	T	TT	T	T	TT	T	FF
S7	22	TT	TF	TFFF	TF	TT	F	F	FFF	TT	TT	T	T	T	T	T
S8	23	TTF	T	T	T	TTF	TTF	F	FF	FF	T	TFF	TTF	F	FF	T

Then, a Mann-Whitney U statistical tests was run on the IBM-SPSS 22 to compare the rank sums of the experimental group and control group. In addition, descriptive statistics, i. e., mean, standard deviation, etc., were calculated using the same instrument to summarize the quantitative data collected from the questionnaire.

The second section of the test “Synonymy Use Test” yielded further quantitative data on the way participants used synonyms of the predetermined academic vocabulary items in their essays to establish achieve lexical cohesion and convey meaning. Thus, a mini corpus was of 2885 words was created on Microsoft Word. After converting it into a PDF format, a corpus analysis was run on AntConc to quantitatively analyze the samples as shown in the following figure.

Figure 15*Corpus analysis of data from Section II (Synonymy Use Test)*

The purpose was to calculate the frequency of the PAVIs and their synonyms in the essays to compare the results from both groups.

4.2.5.2. Qualitative data analysis The second section of the test had to be subjected to descriptive qualitative analysis to see whether the synonyms used by the students who used the ETD to write the essays was effective in establishing the overall lexical cohesion or not. To that end, a Systemic Functional Linguistics (SFL) to discourse analysis was employed. More specifically, the interest was on the textual meta-function analysis, which together with the results of the lexical density test is believed to provide an answer the second research question. Adobe PDF Reader was once again revisited for this purpose as it allowed for highlighting, and, drawing lines and arrows to annotate different excerpts in the analyzed passages as shown in Figure 16:

Figure 16*Annotation of excerpts for discourse analysis***Sample 8**

Human ability to learn a second language requires numerous factors, mainly ones including the age. Many people assume that learning process of a second language slows down, as we age, however this theory in fact is not always actual due to various reasons. In particular, the motivation which plays a crucial role in language learning at any age. Older learners may have stronger significant motivations, such as a desire to travel, connect with family members, or explore new cultures. This significant drive can fuel their commitment to language learning for any perceived cognitive declines. Moreover, effective language learning strategies can bridge the gap between age-related cognitive changes and language acquisition. Older learners can influence their experience and adaptability to adopt their learning approaches, such as focusing on using technology in conversation groups.

In conclusion, the belief that age hinders language learning is a misconception that fails to

Again, the coding scheme for the annotation system was developed and has been thoroughly explained in the coding book (see appendix F).

4.2.6. Population and sampling technique

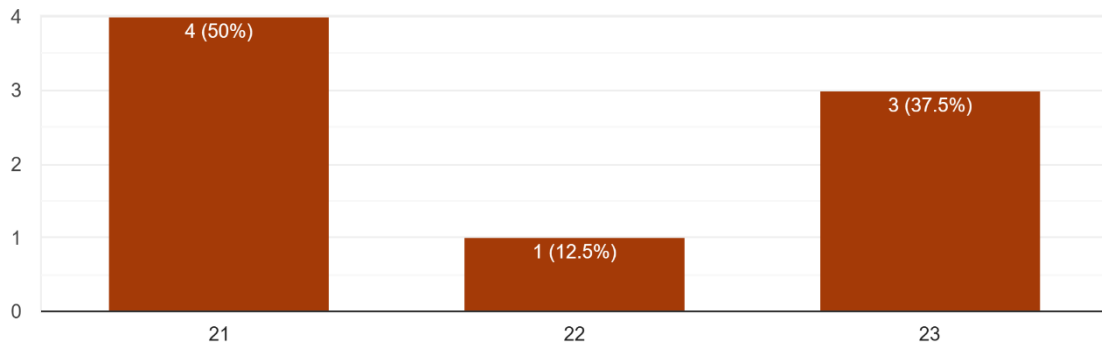
This study took place in the Department of English at Mohamed Khider University of Biskra. The sample consisted 16 first-year master students enrolled in the Sciences of Language program at the same department (n= 16). The rationale behind selecting this population is that they best represent the typical graduate Algerian EFL students whose major is linguistics, and who are required to produce considerable amounts of academic writing to complete their degree, if not to consider Master two students (as they are busy with writing their graduation dissertation). They were between the ages of 21 and 23, and have Arabic as their mother tongue (L1). A total of 16 participants were recruited through voluntary sampling, with eight assigned to the treatment group and eight assigned to the control group. Both were non-randomly recruited. The age of the participants is shown in the following bar graph:

Figure 17

Age of the respondents

What is your age?

8 responses



Seven respondents have Arabic (Darija) as their mother tongue and only one participant reported Tamazight (Chaoui) as their L1. All of them were preparing for a Master’s degree and all were enrolled at the first year of the program. Their major was Sciences of Language and their language learning experience ranged from three to thirteen years as shown in the figure below.

Figure 18

Respondents’ language learning experience



4.2.7. Procedure

At March 3rd, 2024 10:30 am, the experiment took place at the Library of the Faculty of Letters and Foreign Languages, precisely in the Computers Lounge. The participants of this study were recruited to two groups, an experimental group which was formed first and received the treatment, and a control group which was formed subsequently and received no treatment. By receiving the treatment, it is meant using Power Thesaurus when doing the second part of the written test. The participants took the test in an hour time limit, and it was done on computers. However, Power Thesaurus was installed and used on their mobile phone devices. The rationale behind this was to simulate a real CALL environment as much as possible and to allow for easy navigation between two devices because it would have been difficult to move back and forth from MS word office (where the answers are being typed) to Google Chrome where the website of the thesaurus can be opened. In the next days, the participants from the experimental group received the online questionnaire on their email addresses, which were collected via the test as well. Ultimately, the aim was to elicit data on students' use of synonymy in academic writing as one measure of lexical cohesion and to attain insights on their ease of use and usefulness of this instrument.

Conclusion

The current chapter elaborated the underlying methodology for this study. The main terms and concepts in research such as research methodology, paradigm, approach, and design were first defined in a theoretical background, and the choices and rationale made in this study were then illustrated in the second part of the chapter. Encouraged by a pragmatist paradigm, the study followed a quasi-experimental design with convergent parallel and static-group comparison mixed-methods approach to data collection and analysis. The aim was to gather and analyze authentic data both qualitative and quantitative by means of its twofold nature.

The first of which was to measure the extent to which electronic thesaurus-assisted writing activities may influence the use of synonyms in M1 students' Academic Writing. The second, meanwhile, was to explore the possible effect(s) that thesaurus-assisted writing activities could have had on the lexical cohesion of M1 students' academic writing, and their attitudes and perceptions towards the use of this tool to help improve their writing quality. Abiding by this nature of the study, a static group comparison design was employed to test the efficacy of the treatment in a one-shot experiment. This design was also chosen as an alternative to the non-equivalent control group pretest/posttest design which preliminary to be the design adopted for this study. Due to the inability to recruit the said participants who objected to grant the researcher their consent to take part in a long-term treatment as their study schedule was busy, this design was chosen. Data were gathered by means of a written test and an online questionnaire. It was then analyzed using a host of tools and methods as explained in the chapter. Thus far, this chapter paves the way for the subsequent one where the results of data analysis will be displayed and discussed.

Chapter five

Chapter five: Results and discussions

Introduction

5.1. Synonymy knowledge test

5.1.1. Testing the normality of distribution

5.1.2. Comparison of the results of synonymy knowledge test

5.2. Synonymy use test

5.2.1. The results of the synonymy use test

5.3. Results and discussion of the questionnaire

5.3.1. Students profile

5. 3. 2. Perceived ease of use and usefulness of thesaurus

5.3.2. Discussion

5.4. The qualitative analysis of section II

5.4.1. The textual metafunction analysis

5.4.2. Final discussion and concluding remarks

5.5.1. Implications

5.5.2. Limitations

5.5.3. Future directions

Conclusion

“Harking back to Ochs and Schiefflen’s article ‘Language has a heart’ (1989) perhaps we can envoi by suggesting that alongside having heart languages also ongoingly enact their dialogic soul”

James Robert Martin (2003, p. 178)

Introduction

The present chapter is devoted to the analysis, presentation, and discussion of the results from the experiment. To delve into the outcomes of the study and their implications, it builds upon the fieldwork laid in the preceding chapters, particularly the literature review and methodology. Hereby, data will be discussed respectively according to its nature, i.e., quantitative data first then the qualitative data next, and the findings are to be discussed thoroughly. Given the study attempted to address the issue of synonymy knowledge and use among Algerian EFL learners at master level at Biskra University, both quantitative and qualitative data were elicited. While the quantitative analysis is based on data from a two-sections written test and an online questionnaire, qualitative analysis will be on data from section two of the test only. This chapter then functions as a critical juncture where the empirical findings of both data types are presented and analyzed in detail.

This chapter is organized into four main sections. The first one presents and discusses the results from synonymy knowledge test. The second section is for discussing the quantitative analysis of synonymy use test. The same data from the second test is reanalyzed qualitatively in the third section of this chapter. Finally, the last section comprises a final discussion, pedagogical implications of the study, limitations, and recommendations for future research.

5.1. Synonymy Knowledge Test

The first section of the written test “Synonymy Knowledge Test” aimed at having an insight on the level of synonymy knowledge at which all the participants from both the experimental and control groups are. The rationale behind this to provide evidence that prior to the experiment, all the participants were at the same level of synonymy knowledge. The results of this test are summarized in table 3 below.

Table 3

Results from the synonymy knowledge test

Samples	Groups			
	E Group		C Group	
	Correct synonyms provided	Wrong Synonyms Provided	Correct synonyms provided	Wrong Synonyms Provided
S1	20	8	24	21
S2	30	21	21	28
S3	56	26	24	30
S4	14	11	42	44
S5	27	24	24	30
S6	27	35	28	24
S7	29	28	30	21
S8	36	14	41	29
\bar{X}	29.875	20.875	29.25	28.375
S	12.460	9.234	8.048	7.347

To ensure that level of synonymy knowledge of the students from both groups does not differ significantly in terms of statistics, some statistical tests and procedures were run as discussed in the next sections.

5.1.1. Testing the normality of distribution

To statistically analyze the normality of distribution of the data set at hand, the Shapiro-Wilk statistical test of normality was conducted on the software package IBM-SPSS 22. The normality of distribution is tested to decide on which appropriate statistical tests and procedures to follow next for further analysis, and this can affect the reliability of the analysis substantially. Moreover, in the analyses of quantitative data, tests of normality like the Shapiro-Wilk test and the Kolmogorov Smirnov test are commonly used to check whether a data set follows a normal distribution or not (Amrate, 2021). While the Shapiro-Wilk test is used to test the normality of distribution with samples of small size ($n < 50$), the Smirnov Kolmogorov test of normality is widely used with samples of larger size ($n \geq 50$) (Amrate, 2021). Since, the normality tests are used to check whether or not the experimental group and the control group are statistically significantly different from the normal distribution, conducting them poses two statistical hypotheses that correspond to the results of these tests as follows:

H⁰: The experimental group / the control group are not statistically significantly different from the normal distribution.

H^a: The experimental group / the control group are statistically significantly different from the normal distribution.

To accept or reject these hypotheses, the significance level (or the Alpha p -value) is set at $p = 0.05$. The results of the test are displayed in the following table where Sig. stands for the level of significance.

Table 4*The results of the Shapiro Wilk Test of normality*

	Groups	Tests of Normality					
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Syn score	Experimental group	.246	8	.168	.891	8	.237
	Control group	.243	8	.182	.826	8	.055

Note. Significant differences at $p < .05^*$

To interpret the results of the Shapiro-Wilk test of normality, one should bear in mind that if the p -value is greater than 0.05 (Sig. > 0.05), the data is normally distributed, and therefore H^0 is to be rejected. Similarly, if it is below 0.05 (Sig. < 0.05), the data are non-normally distributed and the H^a should be rejected. Hence, it can be observed from the results that p -value of the Experimental group is Sig. = .237 and that of the Control group is at Sig. = .055. Therefore, the H^0 is rejected and the H^a is accepted. In plain English, the sample is normally distributed.

5.1.2. Comparison of the results of synonymy knowledge test

Upon the conduction of the normality test, another three factors were taken into consideration to decide about the appropriate statistical test. These included the type of data (numerical in this section, i.e., the number of correct synonyms provided by the participants), sampling approach, (which was non-random in the case of this study, i.e., voluntary sampling), the normality of distribution (normally distributed herein), and finally the homogeneity of variances (which was tested using the Levene's Test for Equality of Variances as shown in table X below) (Amrate, 2021).

Again, two statistical hypotheses that correspond to the results of these tests were posed as follows:

H⁰: The variances of both experimental group and the control group are heterogenous.

H^a: The variances of both experimental group and the control group are homogeneous.

Table 5

Levene's Test for Equality of Variances

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
Syn score	Equal variances assumed	.255	.622	.119	14	.907	.62500	5.24468	-10.62373	11.87373
	Equal variances not assumed			.119	11.975	.907	.62500	5.24468	-10.80479	12.05479

Note. Significant differences at $p < .05^*$

As shown in the table above, the p -value of the Levene's test is at Sig. = .622, which entails rejecting the null hypothesis and accepting the alternative one. Thus, it can be concluded that the variances of the two groups are homogenous. Regarding these available conditions, it is so far clear the statistical test that should be ran must be nonparametric. Table 6 summarizes the assumptions available in the case of this study.

Table 6

The status of the statistical assumptions for this study

Statistical assumptions		Status	Conclusion
Type of data	Numerical	Met	
Sampling approach	Non-random (voluntary)	Not met	A nonparametric
Distribution of results	Normally distributed	Met	test should be ran
Homogeneity of variances	Homogenous	Met	

According to Amrate (2021), if any of the four statistical assumptions is not met, a nonparametric statistical test should be used. Based on that, it was decided that the most suitable statistical test to compare the performance of the participants from the two groups in the synonymy knowledge test is the Mann Whitney U test. The latter is “a well-known test that works by using the rank-ordering of cases in each group” (Denscombe, 2021, p. 313). To Denscombe (2021)

The Mann-Whitney U test works by producing one overall ranking which is made from both groups being investigated. The positions of members of each group on this combined ranking are then used as the basis for calculating whether there is a statistically significant difference between the two groups (p. 313)

As a nonparametric test, the Mann Whitney U test is the most suitable for comparing the number of correct synonyms provided by the participants from both groups. The results of this test are shown in table 7 below.

Table 7

The results of the Mann Whitney U test

	Descriptive statistics			Inferential statistics	
	<i>n</i>	Mean	SD	Independent Samples Test	Mann-Whitney U Test
Control group	8	29.25	8.05		
Experimental group	8	29.88	12.46	.907	.958

Note. Significant differences at $p < .05^*$

It should be noted that the level of significance is always kept at $p < .05$. This means the following hypotheses:

H⁰: The experimental group significantly differs from the control group in synonymy knowledge.

H^a: The experimental group does not significantly differ from the control group in synonymy knowledge.

The Mann-Whitney U Test as shown in the table indicates that $p = .958$. Hence, the null hypothesis is rejected and the alternative one is accepted. That is to say, the experimental group does not significantly differ from the control group in synonymy knowledge.

One should keep in mind that the rationale behind conducting this series of statistical tests was to know what is the most appropriate statistical test to choose to ensure reliable analysis of data. Addedly, the major objective of this section from the test was to offer empirical evidence to the researcher's hypothesis that the participants of both groups will not differ significantly from each other in terms of their knowledge of synonyms. This will yield a reliable comparison once the suggested intervention is manipulated.

5.2. Synonymy use test

5.2.1. The results of the synonymy use test

The second section of test was to test the participants' ability to use synonyms in writing when aided by a semantic resource like Power Thesaurus. To this end, a writing section was included in the test where the participants had to use the aforementioned tool to assist them by provided alternatives to a host of predetermined academic vocabulary items (Henceforth PAVI). The results from this test are displayed in the following table.

Table 8

The results of synonymy use test

		Number of PAVI Used	Number of Synonyms Used
Experimental group	S1	4	2
	S2	4	6
	S3	4	4
	S4	2	6
	S5	5	4
	S6	8	0
	S7	2	3
	S8	8	4
Mean	3.62	Standard deviation	1.99
Control group	S1	2	2
	S2	0	0
	S3	3	1
	S4	16	1
	S5	1	1
	S6	1	2
	S7	1	2
	S8	2	0
Mean	1.12	Standard deviation	0.83

To compare the results from both groups, the Mann Whitney U statistical test was run on SPSS again. A null hypothesis was automatically suggested by SPSS when conducting the test as follows:

H⁰: The distribution of the number of synonyms used by the students is the same across the two groups.

The results obtained are shown in Figure 18 below.

Figure 19

Comparison of the results and hypothesis testing summary

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of NofSynonyms is the same across categories of Group.	Independent-Samples Mann-Whitney U Test	.010 ¹	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

¹Exact significance is displayed for this test.

To accept or reject the null hypothesis, the level of significance was maintained at (Sig. = .05). The SPSS then recommended that the null hypotheses is to be rejected. According to the Mann Whitney U test, there is a significant difference between the two groups' number of PAVI synonyms' use in the test, with a significance level of (Sig. = 0.010). Having SPSS recommended to reject the null hypothesis, it is statistically proved that there is enough evidence to suggest that the distribution of the number of synonyms used in the test is not the same across the groups, and that that there's a statistically significant variation in performance between the groups in the test. The researcher argues that with the help of Power Thesaurus, the participants from the Experimental group could navigate this tool to look up not only words' synonyms but also how can they be used appropriately in different contexts. Therefore, they could outperform other participants from the control group, who were prior to this test proved at the same level of synonymy knowledge with them, and who were not given access to this tool while writing the essay. Moreover, it can be construed that this statistical difference is significant enough to assure that it is not due to random chance. The researcher, so far, has the evidence to respond to the first research question (RQ1: To what extent do

electronic thesaurus-assisted writing activities yield more cohesive Academic Writing?). To construe this further, electronic thesaurus-assisted writing activities are to this point proved to yield more cohesive academic writing by means of synonymy use.

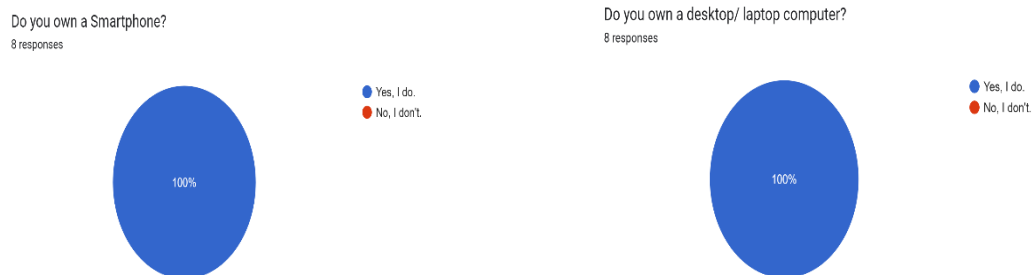
5.3. Results and discussion of the questionnaire

5.3.1. Students profile

To elicit data on the students perceived ease of use and usefulness of Power Thesaurus, an online questionnaire was administered after the experiment. Eight female participants, who formed the experimental group, responded to the questionnaire based on their experiment in using “Power Thesaurus” to look up synonyms of the PAVIs in order to use them properly in writing the argumentative essay. All the respondents reported that they own a smartphone and desktop/laptop as show in the Figure 19 below:

Figure 20

Smartphone and desktop/laptop ownership



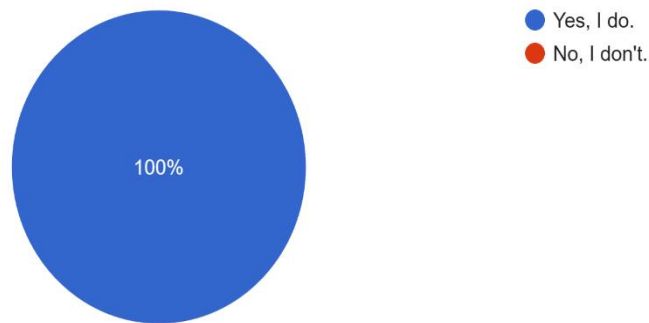
All of them stated that they have access to internet at home as shown in following figure

Figure 21

Internet access

Do you have access to internet at home?

8 responses



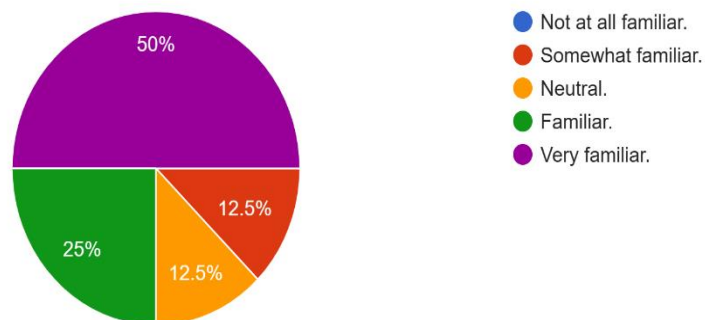
Variability in responses appeared starting from the item that asked about familiarity with Electronic Dictionaries. While 50% of the participants were very familiar, 25 % reported they were familiar, 12.5 % were neutral, and 12.5 % were somewhat familiar with using EDs. This is summarized in Figure 21 below:

Figure 22

Familiarity of the respondents with Electronic Dictionaries

To what extent are you familiar with electronic dictionaries?

8 responses

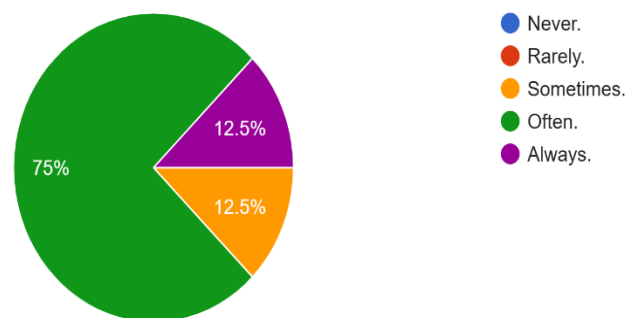


While six respondents reported that they often use EDs, one of them reported that they use them sometimes, and the other one reported that the use hem always. Figure 22 blow summarizes responses to this item.

Figure 23

The extent of using EDs

To what extent do you use electronic dictionaries?
8 responses

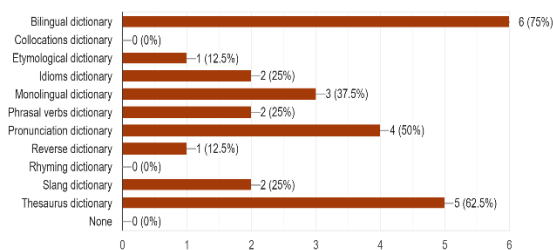


The following figure displays the dictionaries that the respondents know and use.

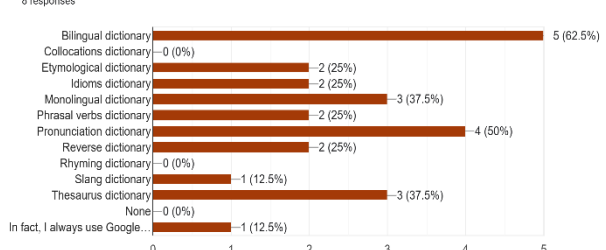
Figure 24

Dictionaries known/used by the respondents

1. What types of dictionaries do you know? Please choose all that apply.
8 responses



2. What types of dictionaries have you used in your EFL learning journey? Please choose all that apply.
8 responses



5. 3. 2. Perceived ease of use and usefulness of thesaurus

These two sections of the questionnaire aimed at eliciting data on the participants perceived

ease of use and perceived usefulness of Power Thesaurus in writing academic essays. Below are the findings discussed.

Table 9

Perceived ease of use and usefulness of Thesaurus

Item	n	Mean (\bar{X})	SD
1. An electronic Thesaurus is easy to use	8	3.50	0.76
2. Thesaurus's user interface (UI) is easy to navigate	8	3.00	0.76
3. The search property in Thesaurus is easy to use	8	3.13	0.99
4. The search results in Thesaurus are easy to navigate	8	2.75	1.16
5. Further search in Thesaurus is easy	8	3.00	1.07
Total mean	8	3.08	0.27
1. Thesaurus is useful in writing essays	8	3.75	0.46
2. Thesaurus is useful in finding the appropriate vocabulary	8	3.88	0.35
3. Thesaurus is useful in employing the appropriate vocabulary	8	3.63	0.74
4. Thesaurus is useful in expressing my ideas	8	3.13	0.99
5. Thesaurus helps me write essays more efficiently	8	3.63	0.74
Total mean	8	3.60	0.29

Notes. 0 = Strongly disagree, 1 = Disagree, 2 = Neutral, 3 = Agree, 4 = Strongly agree.

5.3.2. Discussion

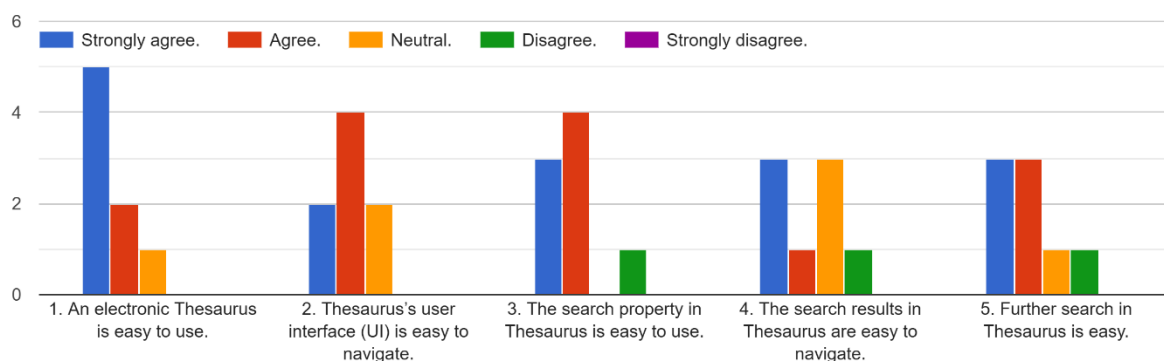
5.3.2.1. The perceived ease of use Perceived ease of use refers to "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 320). The present section aimed at eliciting students perceived ease of Power Thesaurus use. In the first item about the ease of using the electronic thesaurus, the participants generally agreed that the Thesaurus is easy to use. The mean score (\bar{X} = 3.50) indicated the neutral point (2.5) on the scale. Nevertheless, the relatively low standard deviation (S = 0.76) suggests that generally there was a common consensus among the respondents concerning its ease of use. Also, the participants agreed that the thesaurus's user interface (UI) is easy to navigate. Although the mean score (\bar{X} = 3.00) indicates agreement about this, the slightly lower mean compared to the previous item suggests that the participants might have found other aspects of usability more favorable. Similarly, the search property in the Thesaurus was found easy to use. With a mean score at (\bar{X} = 3.13), the participants generally agreed that this

function is easy to use. However, the relatively higher standard deviation ($S= 0.99$) suggests some variability in responses compared to those in previous items. As for the search results in the thesaurus, the participants agreed that they are easy to navigate. With a mean score ($\bar{X}= 2.75$) closer to neutral, the responses suggested some uncertainty or disagreement among the participants concerning the ease of navigating search results. The high standard deviation ($S= 1.16$) indicated variability in the participants' experiences. Meanwhile, the participants generally agreed that conducting further searches within the Thesaurus is easy ($\bar{X}= 3.00$), although the standard deviation indicated some variability in responses ($S= 1.07$). Ultimately, these results indicate that the participants have positive attitudes towards the using the ETD while writing academic essays and that they agree that it is easy to use. The figure below sums up the responses to this section.

Figure 25

Responses on ETDs' Perceived Ease of Use

1. State the level of agreement with the following statements:



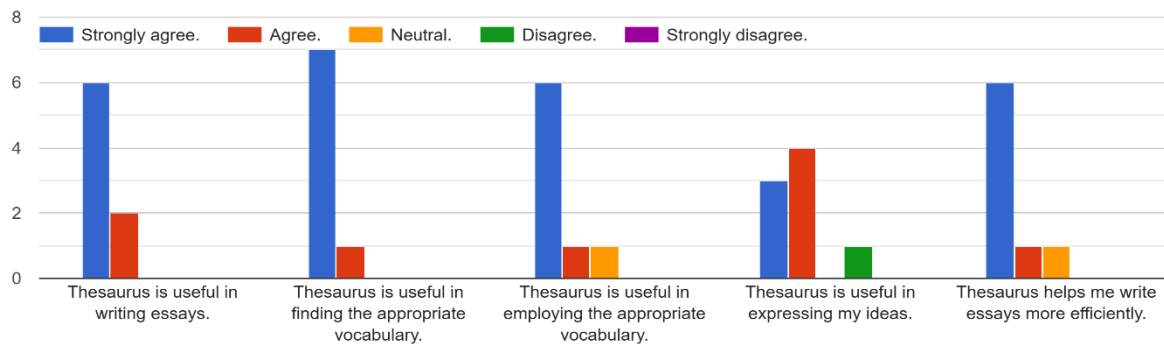
5.3.2.2. Perceived usefulness Perceived usefulness is defined in Davis (1989) as "the degree to which a person believes that using a particular system would enhance his or her job performance" (p. 320). Davis (1989) alleged that "a system high in perceived usefulness is one for which a user believes in the existence of a positive use-performance relationship" (p.

320). In this section, the participants reported that the thesaurus was useful in writing essays with a mean score of ($\bar{X}= 3.75$). This relatively high mean score and low standard deviation ($S= 0.46$) indicate that the participants strongly agree that the Thesaurus is useful in writing essays. Additionally, it was reported that it is useful in finding the appropriate vocabulary ($\bar{X}= 3.88$, $S= 0.35$). The participants strongly agree that the Thesaurus is useful in finding appropriate vocabulary. This is evident in the high mean score and low standard deviation. Also, it was found that it is useful in employing the appropriate vocabulary. This item's mean score was at ($\bar{X}= 3.63$) and the participants generally agreed that the Thesaurus is useful in employing appropriate vocabulary, although the standard deviation ($S= 0.74$) suggests some variability in responses. In fact, the thesaurus was reported somewhat useful in expressing students' ideas when writing, according to the respondents. The mean score for this item was at ($\bar{X}= 3.13$) and a standard deviation at ($S= 0.99$). The mean score close to the neutral point and the relatively high standard deviation indicated that the participants are somewhat neutral or uncertain about whether or not it helped them express their ideas. Finally, the participants generally agree that the Thesaurus helps them write essays more efficiently ($\bar{X}= 3.63$, $S= 0.74$), although the standard deviation suggests some variability in responses to this item. Overall, the analysis of the questionnaire suggest that the respondents find the electronic Thesaurus to be generally easy to use and highly useful in writing essays. This is mainly evident in their responses about its usefulness in finding appropriate vocabulary ($\bar{X}= 3.88$, $S= 0.35$). Overall, the findings from this section prove that the respondents agree that this tool is useful in writing academic essays. The bar graph below summarizes the responses.

Figure 26

Visualization of responses on ETDs' Perceived Usefulness

1. State the level of agreement with the following statements:



Davis affirmed that “an application perceived to be easier to use than another is more likely to be accepted by users” (p. 320). Thus, the results elicited by means of this questionnaire fall in congruence with this claim and prove that the participants found Power Thesaurus easy to use and useful in helping them write an academic essay.

5.4. The qualitative analysis of section II

5.4.1. The textual metafunction analysis

In this SFL-based analysis of the textual metafunction of the eight sample essays that were written by the participants from the experimental group, the analysis process starts by the identification and analysis of Theme/Rheme of each clause. It then extends to cover the analysis of theme type and markedness. As to recapitulate, text metafunction is about the organization of lexicogrammatical choices in a text that makes it connected and united as a whole. The clause refers to the “grammatical unit of the highest rank on the lexicogrammatical rank scale” (Matthiessen et al., 2010, p. 71). While the theme is the point of departure of the message and locates and orients the clause within the text where it occurs, the rheme refers to what falls next to the theme, i. e., the remaining elements of the

clause. The types of themes include topical, textual, and interpersonal. The basis of determining the location of the theme is to see how it is tied to what occurs before it and to what comes next to it. Thus, the eight essays written by the participants from the experimental group are analyzed as follows:

5.4.1.1. Sample 1 In the first sample essay, two excerpts were taken as examples of how the use of synonyms of the predetermined academic vocabulary items helped maintain flow throughout the text as follows:

1: “This process varies in accordance to the age of the learner as the ability to learn a new language **decreases**”.

2: “Second language acquisition is considered to be one of the most **complex** processes ... which makes the second language learning more **challenging** to individuals”.

In compliance with the SFL guidelines, the analysis of theme and rheme was conducted as to examine the textual metafunction of this sample. Two clauses in the first excerpt were analyzed. In the first one “This process ... the learner”, the nominal phrase (also noun phrase but SFL scholars, like Clarke, 2017; Matthiessen, 2004; Halliday & Webster, 2009, prefer the term noun phrase) “This process”, is the theme of the clause. A nominal phrase functions grammatically like a noun, even though it might contain more than one word like in the example at hand (Halliday & Webster, 2009). At this position in the clause, it was employed as the subject to the rheme (the rest of the sentence), i.e., “varies in accordance to ...”. In particular, this theme “This process” is an unmarked theme which follows the usual SVO (Subject + Verb + Object) order of choices in English. It is also important to notice that this theme is topical in terms of its type as it restates the topic (content) of the essay. The second clause “as the ability ... decreases” starts with a marked textual theme “as”. It is marked as it as an example of unusual way to syntactically start a sentence and textual as

it starts with a conjunction that functions as a tie linking the clause to another one in the text. Cohesion is then established by means of two ways. In the one hand, the first is merely grammatical in which the theme is a prepositional phrase. The latter is a nominal phrase that starts with a preposition which modifies a noun. In this example, the preposition “This” is used as an Endophoric Reference to modify a noun that was mentioned at the beginning of the text: the process of Second Language Acquisition. More technically, this is referred to in Halliday and Hasan (1976) terms as the anaphoric reference; the backward reference to a word or phrase that has already been mentioned in a previous location in a text. In the other hand however, cohesion is realized by means of lexical choices within the clause. The word “decreases” is used as an alternative to “slows down” which is mentioned in another location at the beginning of the text. Notably, the writer used other synonyms referring to other words they used in the text, but they were used in different grammatical classes other than the ones that the researcher determined in the prompt. Examples of these included: “crucial role” = “important”, “slows down” = “decreases”, “ability” = “capacity”.

Interestingly, antonyms were also used for the same purpose, though they were not the focus of this analysis. Examples of antonymy included “complex” ≠ “simple”. Ultimately, these lexical choices strengthen the logical progression of ideas and contribute to the flow of the text.

The second excerpt consists of two clauses where two synonyms of the predetermined academic vocabulary items were used to connect two different parts of the text. While the first clause starts with a nominal phrase “Second language acquisition” as the theme, the second opens with a relative pronoun “which” as its theme. The former’s theme is topical as it mentions the general topic of the text. The latter’s theme however is textual, and it is used to connect the clause logically to the previous parts of the text. The second clause starts with a relative pronoun to connect it to what precedes it. Both clauses

are unmarked as both of their themes function simultaneously as the subject of the clause. The researcher’s interest, i.e., synonymy occurs in the rheme of the clause where both “complex” and “challenging” are used to refer to the difficulty of learning a second language. Hence, the analysis of theme and rheme shows how the writer linked the clauses, where the targeted synonyms of the predetermined academic vocabulary items occurred, to the rest of the text to achieve unity and cohesion. It appears hereby that the lexical choices, mainly the use of synonyms, contributed substantially to the overall lexical flow and connectedness of the essay. Table 10 below summarizes the aforementioned textual analysis.

Table 10

Summary of the textual metafunction analysis of sample 1

<i>Excerpt</i>	<i>Clause</i>	<i>Theme</i>	<i>Rheme</i>	<i>Markedness</i>	<i>Theme type</i>
	“This process	“This process	“varies ...	Unmarked	Topical
		... older”	older”		
1	“as the	“as”	“decreases”	Marked	Textual
	ability ...				
	decreases”				
	“Second	“Second	“is	Unmarked	Topical
	language	language	considered		
	acquisition	acquisition”	... process”		
2	... process”				
	“which	“which”	“makes ...	Unmarked	Textual
	makes ...		linked”		
	linked”				

5.4.1.2. Sample 2 In the second sample essay, one passage that consisted two clauses was extracted to Textual Metafunction analysis. The excerpt contained two synonyms of the predetermined academic vocabulary as follows:

1: “Adults typically have fewer opportunities to immerse into the new language compared to children who are constantly exposed to it”.

The first clause in the excerpt starts with the clause “Adults ... language” which departs with an unmarked topical theme “Adults”. It is unmarked as it starts with a theme that is simultaneously the subject of the clause, and topical as it, i.e., the theme, carries content. Additionally, the passage extends with a second clause “compared to ... to it” which is a clause that starts with a marked textual theme “compared to”. It combines two synonyms “typically” = “constantly”, which are used to avoid redundancy and maintain flow. Both synonyms are of the same grammatical class, i.e., adverbs, and they are both used as synonyms to the predetermined academic vocabulary item “frequently”. A summary of this analysis is provided in table 11 below.

Table 11

Summary of the textual metafunction analysis of sample 2

<i>Excerpt</i>	<i>Clause</i>	<i>Theme</i>	<i>Rheme</i>	<i>Markedness</i>	<i>Theme type</i>
1	“Adults ... language”	“This process ... older”	“varies ... older”	Unmarked	Topical
	“compared to ... to it”	“compared to”	“children ... to it”	Marked	Textual

5.4.1.3. Sample 3 The third sample consisted of one passage where synonyms of the predetermined academic vocabulary items were used.

1: “One important factor could be the level of one's exposure to the target language. ... Motivation level also can play a significant role in ...”.

In this passage, the phrase “One important factor” in the first clause functions as an interpersonal theme, stressing the importance of what will be the rheme of the clause. This theme is unmarked as the whole nominal phrase theme “One important factor” functions as a subject to the verb “could be”. In the second clause, the nominal phrase “Motivation level” is a topical theme that is unmarked. It functions as a subject of the clause and carries content. As can be noted, the rhemes of both clauses consist two synonyms that are used as alternatives to the predetermined academic vocabulary item “crucial”. Using these two synonyms helped remote monotony of repetition and connected the two locations in the text, establishing texture through lexical choice.

Table 12

Summary of the textual metafunction analysis of sample 3

<i>Excerpt</i>	<i>Clause</i>	<i>Theme</i>	<i>Rheme</i>	<i>Markedness</i>	<i>Theme type</i>
1	“One important factor ... language”	“One important factor”	“could be ... older”	Unmarked	Interpersonal
	“Motivation level ... in”	“Motivation level”	“can play ... in”	Unmarked	Topical

5.4.1.4. Sample 4 Essay four was the one containing the largest number of examples of synonyms used. Three main passages were taken as follows:

1: “Our ability to learn a second language **slows down** as we age ... human's brain function **decreases** by aging”.

2: “Besides, aging results in workload and stress, leading to give **extra** energy on the learning and **more** focus on the results than the process”.

In the first excerpt, “Our ability to learn a second language” is a nominal phrase that functions as a subject to the first clause, which makes it an unmarked topical theme. The second clause’s theme “as” is marked textual. The third clause “the human's brain function” is yet another nominal phrase that functions as a subject to the verb “decreases”, and which is an unmarked topical theme too. Both verbs highlighted in bold are synonymous and are used to establish lexical cohesion through these lexical choices. The second excerpt consists two clauses as well. The theme of the first clause is marked textual as the clause starts with “Besides” functioning as a preposition. Few clauses next to this one within the text comes “leading ... process” where “leading”; the gerund. As a theme, the latter is unmarked topical. The two highlighted synonyms “extra” = “more” are used as synonyms to avoid repetition and contribute to the lexical flow.

Table 13

Summary of the textual metafunction analysis of sample 4

<i>Excerpt</i>	<i>Clause</i>	<i>Theme</i>	<i>Rheme</i>	<i>Markedness</i>	<i>Theme type</i>
1	“Our ability ... down”	“Our ability ... language”	“slows down”	Unmarked	Topical
	“As we age”	“As”	“age”	Marked	Textual
	“human’s ... by aging”	“human’s function”	“decreases”	Unmarked	Topical
	“Besides ... stress”	“Besides, aging”	“results ... stress”	Marked	Textual
2	“leading ... process”	“leading”	“to give ... process”	Unmarked	Topical

5.4.1.5. Sample 5 The fifth essay comprises three excerpts were synonyms to PAVI were found used as follows:

- 1: “The time spends to learn a language is not as **important** as the time to begin”.
- 2: “To sum up, continues practice and exposing to the target language are **crucial** in the learning process”.
- 3: “Their level of competence **develops** quickly”.

The first passage consists one clause. The theme of this clause is unmarked topical as “The time ... language” recycles and old information that is already mentioned before in the text to link two different parts of it. Grammatically, the theme is the subject of the clause. This applies to the second excerpt either where “Their level of competence” is an unmarked topical theme that restate old content and that is the subject of the clause. “To sum ... process” is the only clause in the third excerpt. “To sum up” is a marked textual theme for this clause. This summative expression functioned as a preposition that linked grammatically the rheme of the clause, where it occurred, to all what preceded it. It indicates that the text has come to an end, and that the rheme of the current clause will be a brief summary of it. Notably in this sample, “important” was used as a synonym to “crucial” which is also used. In the same way, “develops” is used as a synonym to “Enhance”, which is among the PAVI. These semantic choices helped convey similar meanings without repeating words. Such choices contributed to the overall lexical cohesion.

Table 14

Summary of the textual metafunction analysis of sample 5

<i>Excerpt</i>	<i>Clause</i>	<i>Theme</i>	<i>Rheme</i>	<i>Markedness</i>	<i>Theme type</i>
1	“The time ... to begin”	“The time ... language”	“is not ... to begin”	Unmarked	Topical
2	“Their ... quickly”	“Their level of competence”	“develops quickly”	Unmarked	Topical
3	To sum up ... process”	“To sum up”	“are crucial ... process”	Marked	Textual

5.4.1.6. Sample 6 The sixth sample is an outlier that included no PAVI synonyms. The writer of this essay used eight PAVIs instead. Overall, the essay was not as coherent as the others and contained several fragments. In SFL terminology, a “fragment” or an “unfinished clause” is a group of words that does not convey a clear meaning. Examples of these from the excerpt include, but not exclusive to, the passage below:

1: “however when we are aging learning what is called the second language is full of characteristics which learner must follow particularly in specific period of time or s/he will suffer for ages”.

Therefore, the textual metafunction analysis that is focused on the synonymy use would not be functional with this sample.

5.4.1.7. Sample 7 Three passages were taken from the seventh sample essay. These passages contained the largest number of clauses in all the eight sample essays, and they comprised several examples on lexical cohesion achieved by means of synonymy as shown below:

1: “Older learners may struggle with language transfer phenomena because of the **influence** of their second language acquisition”.

2: “Our **ability** to learn a language varies ... Overall, our **capacity** to learn a language diminishes with age”.

3: “our ability to learn a second/ foreign language **slows down**”.

In the first excerpt, there are two clauses. In the first one, “Older learners” is an unmarked topical theme where a nominal phrase is used to refer to something mentioned before (second language learners). The theme of the second clause, which starts from “because”, is marked because it does not start with a subject and textual as its theme functions grammatically as a subordinating conjunction that is used to establish causal relationship between the rheme of the clause where it occurred to the previous clause. This is a common pattern of linking the clause to the previous or next parts of the text. Additionally, the noun “influence” is used as a synonym to “impact” which is originally predetermined by the researcher in the prompt of the test. In the second excerpt, the nominal phrase “Our ability ... language” is an unmarked topical theme of the first clause. “Overall” in the second clause, is a marked textual theme as it indicates summation. In this way, the writer wrapped up the essay with a brief rheme summarizing their argument which prevailed throughout the entire essay. Herein, the use of the noun “capacity” as a synonym to “ability” maintains flow that is created by the lexical options. The same applies to the phrasal verb “slows down” in the first clause in the third excerpt, which is used along with “diminishes” as synonyms for the aforementioned purpose. The third excerpt consisted one clause. Its theme “our ability...language” is a nominal phrase functioning as subject and it brings back a piece of content that was stated in previous locations in the text. It is then an unmarked topical theme. Finally, although it is not among the words that the researcher determined,

replacing “ability” (from the first clause in excerpt three) with “capacity” (in clause two from excerpt two) also supports the researcher’s argument.

Table 15

Summary of the textual metafunction analysis of sample 7

<i>Excerpt</i>	<i>Clause</i>	<i>Theme</i>	<i>Rheme</i>	<i>Markedness</i>	<i>Theme type</i>
1	““Older ... phenomena”	““Older learners””	“may struggle ... ”	Unmarked	Topical
	“because ... because”	“because”	“of ... acquisition”	Marked	Textual
2	“Our ability ... varies”	“Our ability ... language”	“varies”	Unmarked	Topical
	“Overall ... age”	“Overall”	“diminishes ... age”	Marked	Textual
3	“our ability... down”	“our ability... langu age”	“slows down”	Unmarked	Topical

5.4.1.8. Sample 8 The last sample essay contained two examples of the use of PAVI synonyms.

1: “Many people assume that learning process of a second language **slows down**, as we age”.

2: “In conclusion, the belief that age **hinders** language learning is a misconception”.

Table 16

Summary of the textual metafunction analysis of sample 8

<i>Excerpt</i>	<i>Clause</i>	<i>Theme</i>	<i>Rheme</i>	<i>Markedness</i>	<i>Theme type</i>
1	“Many ... age”	“Many people”	“assume ... age”	Unmarked	Topical (could also be interpersonal)
	“as we age”	“as”	“we age”	Marked	Textual
2	“In conclusion ... misconception ”	“In conclusion”	“the belief ... misconception ”	Marked	Textual

The first excerpt contains two clauses “Many ... down” and “as we age”. The theme of the first clause “Many people” is unmarked since it is a nominal phrase that functions as a subject and it is Topical as it restates an old information about the number of proponents of a claim. However, it should be mentioned that, to some people, the word “many” might be subjectively interpreted as a judgement that denotes a postulate of the writer’s own about the number of people, i.e., being categorical in estimating the number of opponents. In such case, the theme would then be interpersonal. Further still, “as we age” is yet another clause embedded in this excerpt. Its theme “as” is marked for it does not function as a subject, and it is textual as it is a subordinating conjunction that the writer used to establish a correlation relationship between doing the aging and SLA decline. In the second passage, there is one clause “In conclusion ... misconception”. The theme of this clause “In conclusion” (summative statement) is marked textual that paves the way for a wrap-up in the rheme.

The verb “hinders” is used as near synonym to the phrasal verb “slows down” in the first

passage to avoid repetition and maintain flow. Other synonyms, that are not among the targeted one, such as "neutral" and "cognitive" contributed to the overall lexical cohesion by providing alternative terminology that enhances clarity and understanding.

5.4.2. Final discussion and concluding remarks

Given the functionality of the SFL-based discourse analysis, and since the aim of this study was to see how did the use of PAVI synonyms contribute to lexical cohesion and meaning creation in this very social context, the theme (given)/rheme (new) textual metafunction analysis was conducted on the essays of the eight participants from the EG. The textual metafunction, as Halliday (1978, p. 113) points out, "has an enabling function with respect to the other two [semantic metafunctions]; it is only in combination with textual meanings that ideational and interpersonal meanings are actualized". Among the eight sample essays that were analyzed, two excerpts were extracted from the first sample essay which contained four clauses. Four themes were found following a pattern of Unmarked/Topical, Marked/textual, Unmarked/Topical, Unmarked/Textual of themes. It is hereby believed that this pattern allows for maintaining text texture. In fact, this is thoroughly discussed in Halliday and Matthiessen (2004). In the second sample, one passage was analyzed, and it consisted two clauses with two themes. The themes followed the same pattern Unmarked/Topical, Marked/Textual. Similarly, this pattern is thought to be used for the purpose of hanging different clauses of the text together and realize texture, as maintained by Hasan (1985). In the third essay, only one excerpt was found relevant to the analysis and it contained two clauses. The first of which started with an Unmarked/Interpersonal theme and the other started with an Unmarked/Topical one. Since the prompt made it clear to the participants that the essay should be argumentative in nature, it is believed that the writer of the essay opted for the interpersonal theme (in the form of a discourse marker that helped to signpost in a subjective manner) to maintain flow through lexical choice and bundles. This

finding is in line with that of Umiyati (2019) and Hasan (1985). Similarly, this was found and discussed in Nesi and Busterkmen (2009). Two excerpts were extracted from essay four and they included five themes which followed a pattern of Unmarked/Topical, Marked/Textual, Unmarked/Topical, Marked/Textual, Unmarked/Topical. In this way, the writer used the PAVIs' synonyms to establish cohesion in the text as underscored in Halliday and Hasan (1976). The fifth essay consisted three clauses and three themes where PAVIs synonyms were used. These themes followed a pattern of Unmarked/Topical, Unmarked/Topical, Marked/Textual. The pattern of unmarked themes following one another subsequently demonstrate how simple sentences prevailed in the text and gave an insight on the lexicogrammatical competence of the writer. Meanwhile, the use of synonyms within these clauses catered to linking different parts of the text together and helped establish the lexical cohesion as explained by Eggins (2004). While the sixth essay was excluded from the analysis because it did not meet the requirements, three passages with five clauses were taken from the seventh sample. These followed a pattern of Unmarked/Topical, Marked/Textual, Unmarked/Topical, Marked/Textual, Unmarked/Topical. Like in the previous samples, the writer opted for constructing their clauses in this pattern to engage carefully in the discussion of the topic without turning attention away from the connectedness and flow of writing. This was also in line with Umiyati (2019), who found that through the speaker's/writer's message could be passed without having the listener's/reader's attention deviated from the language itself, if this pattern is followed. Finally, the eighth sample included two passages where synonyms of PAVI were used. It followed a pattern of Unmarked/Topical, Marked/Textual, Marked/Textual. This writer appears to be more cautious with the language they used than showing much knowledge about the topic under discussion; a finding that falls in

congruence with Forey and Sampson (2017). Although the information provided and the language used were simple, the essay was the most cohesive and coherent.

The presence of marked and unmarked themes in the eight essays that were analyzed reflects the students' command of discourse structure, language proficiency, and their ability to manipulate them effectively. While marked themes were strategically used to add variety and emphasis to writing and argumentation (see for example samples 1,2,4,7), unmarked themes were primarily, and excessively, opted for along with the topical type of theme to introduce, using the old, new information. This might also indicate the limited language proficiency of the students, mainly the grammatical competence, as it was clarified earlier how unmarked themes occur in the most basic syntactic structure of a clause in English. In this matter, the study echoes with the findings from Hoadjli and Lahlouhi (2018). Further still, these uses are also made with regard to the rhetorical strategies that the writers employed to convey meaning. For example, marked themes were used to foreground important information like in the second sample (it was used to denote comparison "compared to"). Similarly, they were employed in sample 7 and 8 in the form of summative discourse markers (Overall/In conclusion) to create a sense of cohesion and coherence and link that particular part of the texts to all what preceded it indicating closure. The use of marked and unmarked themes also provided insights on the students' skills of structuring and organizing written discourse. Both types of themes played a significant role in structuring the flow of information within the essays. The writers used marked themes mainly to introduce new content and to shift focus within the clauses. As explained in the analysis above, these choices contributed to the overall organization and coherence of the essays. The latter finding reciprocally evidences and strengthens that of Tidjani (2018). Overall, discussing students' use of marked and unmarked themes in the essays yielded valuable insights into their language development, rhetorical awareness, and discourse

organization. The three types of themes offered valuable insights into the organization and communicative functions of the lexicogrammatical choices made in the students' argumentative essays. Topical themes were the most used type and they were effectively used to introduce the main topics of the clause. The writers used them to establish the focus of each clause and to indicate the key points they wanted to communicate (see for example samples 1,2,4,8). This is also in line with Sutherland (2019). Textual themes were used to maintain flow through most of the essays, and they often provided information about the discourse itself. This is evident in essay 6 which was excluded from the analysis due to the existence of several fragments in it. Interpersonal theme were the least used ones (only once) as they relate to the writer's stance, attitude, or engagement with the content. In argumentative essays these themes can be used to reflect the writer's evaluation of evidence, interpretation of data, or engagement with opposing viewpoints. The researcher believes that it is because these students were ordered to write with caution (There is a whole lesson about Hedging in Academic Writing in their course of Academic Writing) that they did not employ interpersonal themes properly. To wrap up, the analysis of theme types helped gain deeper understanding of how the participants organized and conveyed information, and position themselves within the discourse using lexicogrammatical choices.

The analyzed excerpts included a number of synonyms of the predetermined vocabulary items that the students used effectively to establish cohesion. This evidences what had been theorized by Halliday and Hasan (1976). More importantly, the use of synonyms is an evidence to what the researcher hypothesized earlier especially that the synonyms were not used in the control group whose participants wrote without the thesaurus. Further still, the researcher argues that while students from the experimental group could use synonyms effectively, others from the control group proved otherwise. Even there were some synonyms used by the said participants, they could not use them

correctly like the participants who used the thesaurus. Additionally, students' use of synonyms in the essays also provides an answer to RQ2 (do thesaurus-assisted writing activities improve lexical cohesion in M1 students' academic writing?) and RQ2.1 (In what ways do thesaurus-assisted writing activities improve lexical cohesion in M1 students' academic writing?). Since "Power Thesaurus" does not only provide synonyms and antonyms but also the pragmatic information needed to know how to use the words correctly in different contexts, it helped the students know exactly how to use the synonym words properly in different contexts for different rhetorical strategies and discursive purposes as shown in the analysis above. The "sentence" feature in "Power Thesaurus" which provides sample sentences where the synonym under research is used provides the pragmatic information about it and the way it could be correctly used. This is extremely helpful for novice writers who need to replace words with their synonyms.

5.5. Implications, limitations, and future directions

5.5.1. Implications

Several implications for pedagogy and methodology for action research could be drawn from the findings of the present study. For example, the theoretical implications included the contribution of the study to the existing research on the effectiveness of thesaurus-assisted writing activities in developing EFL learners' lexical cohesion. The findings helped extend the present understanding of the relationship between thesaurus use and lexical cohesion. Similarly, they provided a deeper understanding of the ways in which thesaurus-assisted writing impact vocabulary and synonymy knowledge and use in writing development, and offered new insights into the effectiveness of integrating thesauri in writing. Overall, this study proved capable to contribute to both the practical and theoretical aspects of EFL writing instruction. Thus, the findings can be used to improve academic writing teaching practices, develop effective learning materials, and advance our

understanding of how EFL learners acquire and develop their lexical cohesion skills and strategies by virtue of a Computer-Assisted Language Learning environment.

Pedagogically, the study aimed to contribute to the field of second language education, particularly Second Language Writing (Henceforth SLW), by investigating the effectiveness of thesaurus-assisted writing in improving learners' lexical cohesion. The findings can benefit several stakeholders, including Algerian syllabus designers who are in charge of tailoring syllabi of academic writing in Higher Education. They provided data-driven evidence to support the inclusion of this aiding tool in EFL writing curricula at the higher education level. In terms of methodological implications, the researcher recommends that Systemic Functional Linguistics approaches to discourse analysis can be exploited in researching and teaching academic writing. This scrutiny framework will broaden both teachers and learners' understanding of how language is used to communicate meaning in social contexts.

The synergy of corpus and discourse analysis that was employed in this study proved useful. Therefore, it should be taken into consideration for those who will be working on analyzing written texts especially academic ones and their features. The researcher also argues for how the slight imbalance of the results between quantitative and qualitative analysis proved the precision of qualitative analysis and its usefulness in analyzing data from small-size samples. More precisely, the overall implications include the following:

5.5.1.1. For syllabus designers Reading through the findings, one can deduce that syllabus designers might consider using them to make informed decisions about the design and implementation of academic writing courses, and ensure that they are effective in developing learners' lexical cohesion skills. Likewise, insights into the types of thesaurus-assisted writing activities that are most effective in promoting lexical cohesion, and which can inform the development of new and improved learning materials might be inferred.

Specifically, more consideration of explicit teaching of academic vocabulary and synonyms and raising EFL students' awareness to their importance should be taken into account. In addition, actual use of words from the academic vocabulary lists in different contexts should be carefully selected and incorporated into the designed curricula. These should be also taught along with their synonyms as this will ensure the betterment of synonymy knowledge and use among EFL learners. In the same vein, focused vocabulary instruction could be opted for within the realm of integrated syllabi used to teach academic writing.

5.5.1.2. For university teachers Meanwhile, the study provided Algerian university teachers, precisely those working at Biskra university, with practical strategies and techniques for integrating thesaurus-assisted writing activities into their writing classes. Concerning the same, instructors can simulate the structure of the test when they are to exploit ETDs in teaching Academic Vocabulary and their synonyms within the course of academic writing. That is, they can start by warm-up activities where they test students' synonymy knowledge level (without using the ETD), and move towards exercises that target synonymy use. Therein, ETDs should be used by the learners as this will scaffold students' knowledge and use of academic vocabulary and synonyms alike. By it, writing instructor can expect to see improvements in EFL students' lexical cohesion, leading to more coherent and cohesive writing. Another account is that of exploiting Computer-Assisted Language Learning. Concerning that, both syllabus designers and teachers of academic writing ought to cooperate to find the best ways to integrate computers and mobile devices into academic writing classes, especially with this revolutionary proliferation of software and chatbots that are powered by Artificial Intelligence, to ensure the best practices of technology exploitation. This can extend to integrating electronic thesauri dictionaries into academic writing classes as they were proved useful. Seemingly, it will ensure the continuous acquisition of vocabulary and synonymy both incidentally and

explicitly. Addedly, further attention must be focused on training EFL students on the different strategies of achieving text texture through lexical choices. To do that, teachers ought to shed more light on teaching units that tackle coherence and cohesion. Final implications include insistence on the development of grammatical competence and training students on the use of different lexicogrammatical resources in writing. Several grammatical errors were noticed in the writing of the participants. This finding falls in line with (Hoadjli & Lahlouhi, 2018) who argued that the foundation of grammatical competence taught at Biskra University is poor and insufficient.

5.5.1.3. For students As for the EFL learners, they can indirectly benefit from the findings of this study in that they will improve their writing skills by considering the problems that have been spotted in the participants' writing and the ways they established text texture by means of lexical choices. On the one hand, by becoming aware of the importance of lexical cohesion, students will be able to write more effectively and communicate their ideas more clearly and persuasively. On the other hand, knowing how can the ability to use a wider range of vocabulary in writing make it flow better will boost their confidence, willingness to communicate through writing, and readiness to further learn about academic vocabulary and synonyms. More importantly, students will come to realize the importance of consulting ideal texts with the purpose of discovering its different linguistic features and properties in mind. This will allow for learning about writing conventions by means of written discourse analysis (see Tidjani, 2018) method. Finally, further attention must be focused on training EFL students on the different strategies of achieving text texture through lexical choices. To realize this endeavor, EFL learners are highly encouraged to further read authentic scholarly texts written by experts in the field, and from other fields. This ensures not only exposure to proper input but also catalyze the acquisition of academic writing conventions and rhetorical properties of this highly

sophisticated form of writing. Similarly, there should be specialized trainings for EFL learners that cover the skills needed to effectively use CALL features in learning academic writing, including computers, electronic bilingual and monolingual dictionaries, especially thesauri dictionaries, at early stages of language learning to maximize the benefits of these instruments. These trainings will reinforce the integration of these tools in real courses and mitigate the challenge that EFL teachers might face.

5.5.2. Limitations

Noteworthy to mention that this study is not free of limitations. The first and most influential challenge that the researcher encountered was recruiting the participants. The design of the study had to be changed for several times because of the inability to obtain the consent of the participants who did not agree to participate in a long-term-treatment study. A second limitation is the sample size. The latter was out of the researcher's control as no assistance from gatekeepers was received nor the students were stimulated to participate. Additionally, executing discourse analysis that is based on SFL framework necessitated a lot of extensive reading on the theory. The researcher wish it was covered in the course of discourse analysis so as to save time for students who will opt for it in the future. Finally, the time allotted for the study was very limited. Around four months were given to the researcher to do the fieldwork, analyze the data, and write the final report, which appeared to be insufficient to do all the aforementioned tasks properly and at ease.

5.5.3. Future directions

The researcher wishes future researchers to further consider investigating the use of electronic thesauri as a long-term treatment. This will enrich the body of knowledge on this matter. In the Algerian context, and at Biskra University specifically, more research on lexical cohesion in EFL students academic writing is direly needed. Finally, it is hoped that the SFL analysis of textual metafunction of academic essays can guide future research to

enrich our understanding of students' rhetorical strategies, critical thinking skills, and development as academic writers.

Conclusion

The analysis of data elicited for this study has been addressed in this chapter. The beginning was with the analysis of the synonymy knowledge test, where the data were quantitatively analyzed by virtue of statistical tests ran on IBM-SPSS software. Another section was then devoted to the quantitative analysis of the frequencies of the synonyms that were used in the essays of both groups. The Mann Whitney U test provided statistical evidence that there was a statistically significant difference between both groups. The difference that was found is not due to random chance but to the suggested treatment. Moreover, this application (Power Thesaurus) that was used as treatment received acceptance from the participants. This was discussed in the results of the online questionnaire about perceived ease of use and usefulness. Subsequently, a systemic functional linguistics-based analysis, with which the textual metafunction of the essays was qualitatively analyzed, construed how the use of synonyms helped realize lexical cohesion and appropriately communicate meaning. Some concluding remarks were incorporated into the discussion of this analysis. Finally, the pedagogical implications, limitations, and directions for future research were proposed.

General conclusion

This study aimed primarily to explore the influence of integrating electronic thesaurus dictionaries (Power Thesaurus in particular) in the activity of writing academic essays (argumentative essays in this case study). More specifically, the aims of the study were to: (1) measure the extent to which electronic thesaurus-assisted writing activities improve synonymy use among Algerian M1 EFL students' Academic Writing; (2) explore possible effects of electronic-assisted writing activities on overall lexical cohesion in Algerian M1 students' academic writing; (3) explore M1 students' attitudes and perceptions towards the use of electronic thesauri dictionaries as an assisting tool that can leverage lexical cohesion in their academic writing. The aforementioned research aims were raised based on the following hypotheses: (1) electronic thesaurus-assisted writing activities will improve synonymy use in M1 students' Academic Writing; (2) electronic thesaurus-assisted writing activities will improve overall lexical cohesion in M1 students' academic writing; (3) Master's students who will use electronic thesauri dictionaries to explore synonyms while writing academic essays will exhibit positive perceived ease of use and usefulness of this instrument. As far as the triangulation is concerned, the data was then collected by means of two instruments, a written test of synonymy knowledge and use and an online questionnaire. The data was analyzed quantitatively and qualitatively to determine (1) whether or not the participants were at the same level of synonymy knowledge prior to the test, (2) compare the participants' performance in the synonymy use test to see if there is statistically significant difference, and (3) to explore how did the use of the PAVIs synonyms contributed to the establishment of overall lexical cohesion in the essays of the experimental group.

Having spotted a knowledge gap in the literature concerning studies on the use of electronic thesauri as aiding tools in writing academic texts, four research questions were

raised as follows: (1) to what extent do electronic thesaurus-assisted writing activities yield more cohesive Academic Writing? (2) do thesaurus-assisted writing activities improve lexical cohesion in M1 students' academic writing? (2.1) in what ways do thesaurus-assisted writing activities improve lexical cohesion in M1 students' academic writing? (3) what are the attitudes and perceptions of M1 students towards the perceived ease of use and usefulness of ETDs? In response to RQ1, the Mann-Whitney U Test was first run on IBM-SPSS 22. to assure that all the participants had the same level of synonymy knowledge. The results indicated that there was no statistically significant difference between both groups. The same test was run again to compare the results obtained from the synonymy use test where only the EG participants were allowed to use the ETD. The results indicated that there is a statistically significant difference between the two groups' number of PAVI synonyms' use in the test, with a significance level of (Sig. = 0.010). In this way, RQ1 has been answered as it was statistically evident that the distribution of the number of synonyms used in the test is not the same across the two groups, and that that the EG participants outperformed those of from the CG. The researcher argued statistically significant variation in performance between the groups in the test. The level of significance construes that the statistical difference was not due to random chance and that the treatment was effective in increasing the number of PAVIs synonyms in the participants academic writing. This paved the way to RQs 2 and 2.1. In other words, the question was how would this increase in the use of the said synonyms affect the overall quality of the essays? The qualitative analysis catered a firm response to this inquiry. The SFL-based Textual Metafunction analysis revealed that the participants' use of marked and unmarked themes in the essays yielded valuable insights into their language development, rhetorical awareness, and discourse organization. The three types of themes offered valuable insights into the organization and communicative functions of the semantic choices made in the students' argumentative essays. Topical themes were the most used type

and they were effectively used to introduce the main topics of the clauses. The participants used them to establish the focus of each clause and to indicate the key points they wanted to communicate. Textual themes were used to maintain flow through most of the essays, and they often provided information about the organization of the discourse itself. Interpersonal themes were the least used ones (only once) as they relate to the writer's stance, attitude, or engagement with the content. It should be noted that the analyzed passages included a number of the PAVIs synonyms, which the students used effectively to establish cohesion. The use of these synonyms tied the clauses one to the other and rendered them hanged together, which created what Halliday and Hasan (1976) call text texture. This use evidenced the researcher's hypothesis about the role of using the ETD in improving the overall lexical cohesion in the essays. This was especially evident in that the synonyms were either not used or misused in the essays of the participants from the CG who wrote without the using thesaurus. Additionally, it was noticed that the interpersonal themes were the least used. The researcher construed that it is because the students were taught to write with caution (there is a whole lesson about Hedging in Academic Writing in their course of Academic Writing) that they could not employ them. Thus, a call for future research was made to conduct correlational investigations about the impact of teaching hedging on the use of interpersonal themes. Eventually, the results from the questionnaire provided an answer to RQ3, indicating that the participants had positive attitudes towards the ease of using the ETDs and their usefulness in writing academic essays. They generally agreed that these tools are easy to use and that they are useful.

As reported earlier, many EFL students at the department of English, Mohamed Khider University of Biskra struggle to effectively produce cohesive and coherent academic essays (Saihi, 2013; Hoadjli & Lahlouhi, 2018). The findings of this study can solve this problem, if taken into consideration by syllabus designers, teachers, and other stakeholders.

They do also enrich the body of knowledge on the viability of electronic thesauri use in academic writing in the Algerian context, especially that studies of such type are scarce. Additionally, the study falls in line with Halliday and Hassan's (1976) theory of cohesion as it provides evidence on how using synonyms contribute to text texture. In the same vein, it provides an instance on the exploitation of Systemic Functional Linguistics in the fields of Second Language Writing and Computer-Assisted Language Learning. In reality, both SFL and CALL are not fully exploited in Algeria.

It should be noted that the researcher encountered a number of challenges that narrowed down the scope of data collection and analysis. These included difficulties to recruit the participants, the small size of the sample, the execution of SFL-based discourse analysis, and finally the time allotted for conducting the study. An explanation to why these limitations exist is the students' unwillingness to take part in research studies that are held by Master's students. Based on the findings and these limitations, some recommendations for future research were suggested including the insistence on the urge to conduct longitudinal research about the use of electronic thesauri in academic writing, and to conduct further research on lexical cohesion in EFL students' academic writing. Finally, it is hoped that future research will consider conducting SFL discourse analysis of textual metafunction of EFL students' essays to enrich our understanding of their rhetorical strategies, critical thinking skills, and development as academic writers.

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Appendices

Appendix A: Request for permission to conduct research at department

February 21st, 2024

To: Dr. BOUHITEM Tayeb

Head of the Department of English

El Alia, Biskra

REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT DEPARTMENT

Dear Dr. Bouhitem,

My name is KEBSA Aimen, and I am a Master two student of Sciences of Language. I wish to conduct research for my Master's thesis which is titled: "Investigating the Effectiveness of Thesaurus-Assisted Writing Activities in Improving Algerian EFL Learners' Synonymy Knowledge and Use as a Measure of Lexical Cohesion in Academic Writing: The Case of Master One Students of English at Mohamed Khider University of Biskra" at your department. This project will be conducted under the supervision of Dr. Moustafa AMRATE. I am hereby seeking your consent to work with a number of master one students as the population with which I intend to conduct my experiment. I will provide you with a copy of my thesis proposal which includes copies of the measure and consent to be used in the research process. Upon completion of the study, I undertake to provide the Department of English with a bound copy of the full research report. If you require any further information, please do not hesitate to contact me via numbers at +213551824189 or +213556731795 and emails kebsa.aimen.97@gmail.com / aimen_kebsa@univ-biskra.dz

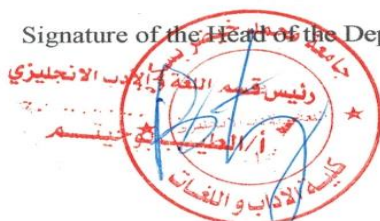
Thank you for your time and consideration in this matter.

Yours sincerely,

KEBSA Aimen,

Mohamed Khider University of Biskra

Signature of the Head of the Department



Signature of the supervisor



Appendix B: Synonymy knowledge and use test



THE DEMOCRATIC REPUBLIC OF ALGERIA
 MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH
 MOHAMED KHEIDER UNIVERSITY OF BISKRA
 FACULTY OF ARTS AND FOREIGN LANGUAGES DEPARTMENT OF ENGLISH



The Test of Synonymy Knowledge and Use in Academic Writing

I- Section One: Provide as many synonyms as you can to the following academic vocabulary.

- Phones and dictionaries are **not allowed**.
- Time limit: 20 minutes

Grammatical class	Word n ⁰	The word	Synonym n ¹	Synonym n ²	Synonym n ³	Synonym n ⁴
VERBS	1	Reduce	.....	.....	.....	.....
	2	Provide	.....	.....	.....	.....
	3	Improve	.....	.....	.....	.....
	4	Inform	.....	.....	.....	.....
	5	Achieve	.....	.....	.....	.....
	6	Examine	.....	.....	.....	.....
	7	Yield	.....	.....	.....	.....
	8	Involve	.....	.....	.....	.....
	9	Note	.....	.....	.....	.....
	10	Enhance	.....	.....	.....	.....
NOUNS	11	Significance	.....	.....	.....	.....
	12	Function	.....	.....	.....	.....
	13	Impact	.....	.....	.....	.....
	14	Feature	.....	.....	.....	.....
	15	Researcher	.....	.....	.....	.....
	16	Attitude	.....	.....	.....	.....
	17	Approach	.....	.....	.....	.....
	18	Gain	.....	.....	.....	.....
	19	Theory	.....	.....	.....	.....
	20	Review	.....	.....	.....	.....
ADJECTIVES	21	Current	.....	.....	.....	.....
	22	Theoretical	.....	.....	.....	.....
	23	Crucial	.....	.....	.....	.....
	24	Significant	.....	.....	.....	.....
	25	Total	.....	.....	.....	.....
	26	Useful	.....	.....	.....	.....
	27	Additional	.....	.....	.....	.....
	28	Unique	.....	.....	.....	.....
	29	Necessary	.....	.....	.....	.....
	30	Actual	.....	.....	.....	.....
ADVERBS	31	Therefore	.....	.....	.....	.....
	32	However	.....	.....	.....	.....
	33	Frequently	.....	.....	.....	.....
	34	Indeed	.....	.....	.....	.....
	35	Particularly	.....	.....	.....	.....
	36	i.e.	.....	.....	.....	.....
	37	Moreover	.....	.....	.....	.....
	38	Likely	.....	.....	.....	.....
	39	Significantly	.....	.....	.....	.....
	40	Specifically	.....	.....	.....	.....

Appendix C: Students' questionnaire

2/25/24, 6:20 PM

Students' Questionnaire

Students' Questionnaire

Dear Students,

You are kindly invited to read (thoroughly) and provide answers to the following questionnaire based on your experience throughout the thesaurus-assisted writing test. This questionnaire is designed to attain information on your attitudes and perceived ease of use and usefulness of thesaurus-assisted writing tasks that you have done in this study. Please consider the questions carefully, as your input is very much invaluable to this research. We assure you that the questionnaire is anonymous. Your responses will remain strictly confidential and will be used solely for research purposes. Kindly, tick the right answer(s) and provide full statement whenever required. In case of any inquiries or need for further clarification the researcher is available at:

aimen.kebsa@univ-biskra.dz / kebsa.aimen.97@gmail.com

Thank You for your time and effort!

Students' Informed Consent

Anonymity: We hereby emphasize that your participation is entirely anonymous. Please be assured that your name and any other identifying details will not be linked to your responses. Your privacy is our utmost priority. Therefore, it is unlikely that you will experience any risks or discomforts beyond what would be experienced in everyday life by responding to this questionnaire.

Confidentiality: The data collected in this study is completely anonymous. No personally identifiable information will be collected and the information you choose to provide in this study cannot be connected back to you. Results from this study may be published within the final manuscript of this master dissertation and may be shared with other researchers through the university online data repository (<http://archives.univ-biskra.dz/>).

Questions or Concerns: If you have any questions or comments about the questionnaire, you may contact the researcher: Mr. KEBSA Aimen, (Master Two student of Sciences of Language) via phone at: +213556731795, or email at: aimen_kebsa@univ-biskra.dz For questions regarding your rights as a participant in this research, contact (the supervisor of this thesis) Dr. AMRATE Moustafa, (Associate Professor of Applied Linguistics at MKUB) by email at moustafa.amrate@univ-biskra.dz

2/25/24, 6:20 PM

Students' Questionnaire

Consent: I have read and understood the above consent form, and I hereby certify that I am 18 years old * or older. By clicking on the continue button below, I indicate my willingness to voluntarily respond to this questionnaire.

Continue

Students Profile Information

This section is devoted to gather general information about the linguistic and educational backgrounds of the students.

What is your gender? *

Male.

Female.

What is your age? *

21

What is your mother tongue? *

Arabic

2/25/24, 6:20 PM

Students' Questionnaire

What is the year you are currently enrolled in? *

- L1.
- L2.
- L3.
- M1.
- M2.

What degree you are preparing for? *

- Bachelor.
- Master.

Language learning experience (years) *

10 Years.

Do you own a Smartphone? *

- Yes, I do.
- No, I don't.

2/25/24, 6:20 PM

Students' Questionnaire

Do you own a desktop/ laptop computer? *

- Yes, I do.
- No, I don't.

Do you have access to internet at home? *

- Yes, I do.
- No, I don't.

To what extent are you familiar with electronic dictionaries? *

- Not at all familiar.
- Somewhat familiar.
- Neutral.
- Familiar.
- Very familiar.

2/25/24, 6:20 PM

Students' Questionnaire

To what extent do you use electronic dictionaries? *

- Never.
- Rarely.
- Sometimes.
- Often.
- Always.

Section One: General attitudes towards using electronic thesaurus dictionaries

This section is devoted to gathering information about students' general attitudes towards using electronic thesauri.

2/25/24, 6:20 PM

Students' Questionnaire

1. What types of dictionaries do you know? Please choose all that apply. *

- Bilingual dictionary
- Collocations dictionary
- Etymological dictionary
- Idioms dictionary
- Monolingual dictionary
- Phrasal verbs dictionary
- Pronunciation dictionary
- Reverse dictionary
- Rhyming dictionary
- Slang dictionary
- Thesaurus dictionary
- None
- Other:

2/25/24, 6:20 PM

Students' Questionnaire

2. What types of dictionaries have you used in your EFL learning journey? Please choose all that apply. *

- Bilingual dictionary
- Collocations dictionary
- Etymological dictionary
- Idioms dictionary
- Monolingual dictionary
- Phrasal verbs dictionary
- Pronunciation dictionary
- Reverse dictionary
- Rhyming dictionary
- Slang dictionary
- Thesaurus dictionary
- None
- Other:

Section Two: Perceived ease of thesaurus use in academic essay writing

This section is devoted to gathering information on students' perceived ease of electronic thesauri use.

2/25/24, 6:20 PM

Students' Questionnaire

1. State the level of agreement with the following statements: *

	Strongly agree.	Agree.	Neutral.	Disagree.	Strongly disagree.
1. An electronic Thesaurus is easy to use.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Thesaurus's user interface (UI) is easy navigate.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. The search property in Thesaurus is easy to use.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. The search results in Thesaurus are easy to navigate.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Further search in Thesaurus is easy.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section Three: Perceived usefulness of thesaurus use in academic essay writing

This section is devoted to gathering information on students' perceived usefulness of using electronic thesauri.

2/25/24, 6:20 PM

Students' Questionnaire

1. State the level of agreement with the following statements: *

	Strongly agree.	Agree.	Neutral.	Disagree.	Strongly disagree.
Thesaurus is useful in writing essays.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thesaurus is useful in finding the appropriate vocabulary.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thesaurus is useful in employing the appropriate vocabulary.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thesaurus is useful in expressing my ideas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Thesaurus helps me write essays more efficiently.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The End



Appendix D: Test’s validation form and opinionnaire



THE DEMOCRATIC REPUBLIC OF ALGERIA
 MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH
 MOHAMED KHEIDER UNIVERSITY OF BISKRA
 FACULTY OF ARTS AND FOREIGN LANGUAGES DEPARTMENT OF ENGLISH



The Test Validation Form

I do hereby certify that I have reviewed the “Test of Synonymy Knowledge and Use in Academic Writing” which will be used to investigate the effectiveness of Electronic Thesaurus-Assisted Writing Activities in improving master one students’ synonymy use in academic writing at Mohamed Khider university of Biskra. This study will be conducted by Mr. Aimen KEBSA who is currently preparing for a Master’s degree in Sciences of Language. I have provided the said researcher with the feedback on both the content and the layout of this instrument.

Background of the Expert

Full Name:
Institution:
Current position:
Degree:
Phone Number:
Email Address:
Signature:

Researcher’s Contact Information

Full Name: Aimen KEBSA.
Emails: aimen_kebsa@univ-biskra.dz / kebsa.aimen.97@gmail.com
University: University of Mohamed Khider University, Biskra.
Faculty: Faculty of Arts and Foreign Languages.
Department: Department of English.

The Opinoinnaire

1. Are there any repetitive questions?

Yes No

- If yes, please notify them below:

.....

2. Did you find any grammatical mistakes/typos in the items?

Yes No

- If yes, please specify them below:

.....

3. Are there any irrelevant/unnecessary items that you recommend/need to be removed?

Yes No

- If yes, please mention them below:

.....

4. Is the length of the questionnaire reasonable?

Yes No

- If no, please suggested needed adjustment(s):

.....

5. Are there any ambiguous questions that need to be reformulated/clarified?

Yes No

- If yes, please indicate which ones to be rephrased? Kindly, provide your suggestion(s):

.....
.....
.....

6. How do you find the overall layout?

.....
.....
.....

7. Are the response categories appropriate?

Yes No

Kindly, write/suggest any question(s) that you believe should be in this questionnaire but have not been included:

.....
.....
.....
.....

Thank You For Your Collaboration

Appendix E: Questionnaire’s validation form and opinionnaire



THE DEMOCRATIC REPUBLIC OF ALGERIA
 MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH
 MOHAMED KHEIDER UNIVERSITY OF BISKRA
 FACULTY OF ARTS AND FOREIGN LANGUAGES
 DEPARTMENT OF ENGLISH



The Questionnaire Validation Form

I do hereby certify that I have read the “Post Test Students’ Attitudes and Perceived Ease of Use/Usefulness Questionnaire” which will be used to investigate the effectiveness of thesaurus-assisted writing activities in improving Master one students’ synonymy use in academic writing at Mohamed Khider university of Biskra. This study will be conducted by Mr. Aimen KEBSA who is currently preparing for a Master’s degree in Sciences of Language. I have provided the said research with the feedback on both the content and the layout of this instrument.

Background of the Expert

Full Name:

Institution:

Current position:

Degree:

Phone Number:

Email Address:

Signature:

Researcher’s Contact Information

Full Name: Aimen KEBSA.

Emails: aimen_kebsa@univ-biskra.dz / kebsa.aimen.97@gmail.com

University: University of Mohamed Khider University, Biskra.

Faculty: Faculty of Arts and Foreign Languages.

Department: Department of English.

The Opinionnaire

1. Are there any repetitive questions?

Yes

No

- If yes, please notify them below:

.....

2. Did you find any grammatical mistakes/typos in the items?

Yes

No

- If yes, please specify them below:

.....

3. Are there any irrelevant/unnecessary items that you recommend/need to be removed?

Yes

No

- If yes, please mention them below:

.....

4. Is the length of the questionnaire reasonable?

Yes

No

- If no, please suggested needed adjustment(s):

.....

5. Are there any ambiguous questions that need to be reformulated/clarified?

Yes No

- If yes, please indicate which ones to be rephrased? Kindly, provide your suggestion(s):

.....
.....
.....

6. How do you find the overall layout of the questionnaire?

.....
.....
.....

7. Are the response categories appropriate?

Yes No

Kindly, write/suggest any question(s) that you believe should be in this questionnaire but have not been included:

.....
.....
.....
.....

Thank You For Your Collaboration

Appendix F: Test codebook

Quantitative data analysis coding scheme

Variable	Code	Meaning	Notes
Number of Predetermined Academic Vocabulary Items Provided	No PAVIs	How many Predetermined Academic Vocabulary Items has the participant provided	These are counted
Number of Correct Synonyms Provided	No CSP	How many Correct Synonyms has the participant provided	These are counted
Number of Wrong Synonyms Provided	N WSP	How many Wrong Synonyms has the participant provided	These are not counted
Correct	T	Correct synonym	T is derived from "True".
Wrong	F	Wrong synonym	F is derived from "False".

Qualitative Data Analysis coding scheme

Variable	Code	Meaning	Notes
Predetermined Academic Vocabulary Item	Highlighted in yellow	To indicate how many Predetermined Academic Vocabulary Items have the participants provided	/
Synonyms Used in Different Grammatical Class	Highlighted in red	To indicate how many Synonyms Used in Different Grammatical Class Occurred	These are not counted
Targeted Synonyms that are Used Correctly	Highlighted in green	To indicate how many Targeted Synonyms that were Used Correctly Occurred	These are counted
Non-Targeted Synonyms that are Used Correctly	Highlighted in pink	To indicate how many Non-Targeted Synonyms that are Used Correctly Occurred	These are not counted
Duplications of Synonyms that are Used Correctly in Previous Locations	Highlighted in bleu	To indicate how many Duplications of Synonyms that are Used Correctly in Previous Locations Occurred	These are not counted
Two targeted synonyms occurred in a row	Red Underline	Used to notify to locations where two targeted synonyms occurred in a row to check whether the use is correct or not.	Counted if semantically used correctly
Cohesive Force Direction	Green arrow	Used to direct attention from one location where a tie was used to link a part of a text to another.	The purpose is to track lexical cohesion realized by means of synonymy use.

ملخص الدراسة

هدفت هذه الدراسة إلى تحقيق فعالية الكتابة بمساعدة قاموس المترادفات (قاموس Power Thesaurus في دراسة الحالة هذه) ودوره في تحسين استخدام طلاب اللغة الانجليزية كلغة اجنبية الجزائريين للمترادفات كمؤشر على السبك المعجمي في مقالاتهم الأكاديمية. بفضل توجهها البراغماتي، اعتمدت الدراسة على المنهج البحثي المختلط مع تصميم مزجي متقارب (مقارنة المجموعات الثابتة). وبخصوص العينة المدروسة فقد ضمت 16 طالب ماجستير في علوم اللغة تم اختيارهم وفقاً لمنهج عينة الاستجابة الطوعية. تم جمع البيانات عن طريق اختبار كتابي يهدف لاختبار معرفة واستخدام المترادفات واستبيان إلكتروني. تم تحليل البيانات كمياً باستخدام برنامج IBM-SPSS 22 للتحليلات الإحصائية وبرنامج AntConc لاجراء تحليل المتون النصية. علاوة على ذلك، تم اتباع نظرية علم اللغة النسقي الوظيفي لتحليل الوظيفة النصية للمقالات المكتوبة نوعياً. أظهرت نتائج اختبار مان ويتي يو الإحصائي وجود فرق ذو دلالة إحصائية كبيرة بين عدد المترادفات المستخدمة من قبل المجموعتين في الاختبار، بمستوى دلالة $(p = .10)$ كما وكشف تحليل الخطاب المستند على السانيات الوظيفية النظامية أن استخدام المشاركين للموضوعات المميزة وغير المميزة في المقالات أتاح فهما قيماً حول التطور اللغوي لديهم ووعيهم البلاغي ومهارات تنظيم النص لديهم. كما وُجد أن المشاركين استخدموا الأنواع الثلاثة من الموضوعات، حيث كانت (1) الموضوعات المحورية هي الأكثر استخداماً، (2) تلتها الموضوعات النصية، ثم (3) الموضوعات الشخصية والتي كانت الأقل استخداماً. ضمن نفس الجمل، ظهرت المترادفات المستهدفة. وأشارت نتائج تحليل الخطاب أيضاً إلى أنه بينما استخدم المشاركون من المجموعة التجريبية المترادفات المستهدفة بفعالية لإقامة التماسك النصي، فإن نظرائهم من المجموعة الضابطة لم يستخدموها أو لم يحسنوا استخدامها في كثير من الأحيان. وبناء على هذه النتائج تم استخلاص مجموعة من النتائج والتوصيات.

الكلمات المفتاحية: الكتابة الأكاديمية، قاموس المترادفات الإلكتروني، السبك المعجمي، الترادف، اللسانيات الوظيفية النظامية، الوظائف النصية.