



Democratic and Popular Republic of Algeria
Ministry of Higher Education and Scientific Research
University of Ibn Khaldoun, Tiaret
Faculty of Letters and Foreign Languages
Department of English



**Investigating the impact of Google Translate on EFL
Learners' Memory and Vocabulary Mastery**

**Case study: 3rd Year Students of the English Department at Ibn Khaldoun
University of Tiaret**

**Dissertation submitted in Departement Of English as a Partial fulfillment
of the Requirements for the Masters Degree in Linguistics.**

Submitted by:

Ms. Hadil BOUGUELMOUNA

Ms. Yassamine BOUHENNI

Board of Examiners:

Dr. Ghalem Abbar	(MCB)	University of Tiaret	Chairman
Dr. Allel Bilel Fasla	(MCB)	University of Tiaret	Supervisor
Dr. Amine Ayada	(MCB)	University of Tiaret	Examiner

Academic Year 2022/2023

Dedication

In the name of Allah the most Gracious, the most Merciful I express my gratitude to Allah for granting me the ability and assistance to accomplish this thesis.

I dedicate this thesis to:

My beloved parents who have always been my greatest source of inspiration and support their unwavering love and encouragement have given me the strength and motivation to pursue my academic goals.

To my precious sisters and brothers for their love and encouragement

To all my family: aunts and uncles

To all my friends and colleagues

Finally, I dedicate this work and give special thanks to my partner Yassamine.

Thank you all for your support and encouragement along the way.

Hadil

Dedication

I dedicate this work to:

First, those who can not be compensated for the sacrifices they have made for our education and well-be to our parents who have sacrificed themselves to take charge of us throughout our formation and who are the origin of our success that God keeps and protects them.

To my family and dear friends who gave me their support in the most difficult moments.

To mister Fasla Bilel who is behind in making this research possible through guiding us to complete this study, and to all my honorable teachers who accompanied me in all phases, from primary school to university.

I dedicate this work and give special thanks to my wonderful partner and friend Hadil for sharing this work with me.

Yassamine

Acknowledgment

Above all, we want to convey our gratitude to Allah for granting us the strength and perseverance to pursue our studies and achieve this level of success. We offer our utmost admiration to Allah.

*We are extremely grateful to our teacher and supervisor **Dr. Allel Bilel Fasla** for being kind and helping us over the year. This work could not have been completed without his constant assistance and guidance.*

We also owe a heartfelt gratitude, appreciation, and thanks for the valuable efforts and contributions made by the members of the board to read and evaluate our work.

Finally, we want to extend our gratitude to everyone who has provided us with support and motivation, including our family members, friends, peers, and teachers.

Abstract

Recent years have witnessed a widespread adoption of Google Translate as a favored resource among language learners, on account of its user-friendly interface and broad accessibility. This technology enables learners to swiftly and effortlessly translate words, phrases, and even complete sentences between languages. Therefore, this dissertation seeks to investigate the impact of Google Translate on EFL learners' memory and vocabulary mastery. The study was conducted at the University of Ibn khaldoun at the English department. The investigation involved a sample of 96 third year B.A students who took translation classes. The study employed a mixed method. Including a translation task and a questionnaire. The results obtained from the students' responses demonstrated that Google Translate has the potential to be beneficial in enhancing vocabulary acquisition, provided that it is used to translate isolated words. However, when used to translate longer texts, its accuracy was found to be somewhat unreliable, which could potentially misinform learners and affect their learning process negatively. Regarding memory retention, a majority of students noted that translated words tended to be forgotten when suggested by Google Translate, but that consulting dictionaries or seeking clarification could aid in the retention of these words.

Keywords: *Google Translate, memory retention, vocabulary mastery, language learning.*

List of Acronyms

MT: Machine Translation

EFL: English Foreign Language

IBM: International Business Machines Corporation

ALPAC: Automatic Language Processing Advisory Committee

SL: Source Language

TL: Target Language

EBMT: Example Based Machine Translation

NMT : Neural Machine Translation

AI : Artificial Intelligence

GT: Google Translate

GTA: Google Translate Application

API: Application Programming Interface

SMT: Statistical Machine Translation

GNMT: Google Neural Machine Translation

STM: Short Term Memory

WM: Working Memory

LTM: Long Term Memory

List of Tables

Table 1: Different Translation without Using GT

Table 2: Showing Students Gender

Table 3: Showing Students Self-evaluation on English Proficiency

Table 4: Showing Students Views about the need to Use Machine Translation

Table 5: Showing Students Preferred Machine Translation Tool

Table 6: Students' Perception about Frequency of Using Google Translate to Complete assignment

Table 7: Students' Views about Exploring the Reliability of Google Translate as a Tool for Vocabulary Acquisition

Table 8: Assessing the Quality of Translations Provided by Google Translate

Table 9: Students' Recalling Ability of Translated words

Table 10: Students' view about the Effectiveness of Using Google Translate on improving their vocabulary

List of figures

- Figure 1:** Machine Translation architectures
- Figure 2:** Direct translation model
- Figure 3:** Interlingua model
- Figure 4:** Transfer model
- Figure 5:** Statistical-based model
- Figure 6:** Example-based model
- Figure 7:** Writing modes on Google translate (copying and pasting, translating photos and dictating with voice)
- Figure 8:** Handwriting mode
- Figure 9:** Typing with letters mode
- Figure 10:** An example about GT's errors
- Figure 1:** Students' gender
- Figure 2:** Students' self-evaluation on English proficiency
- Figure 3:** Students' views about the need to use Machine Translation Translation
- Figure 4:** Students' preferred Machine Translation tool
- Figure 5:** Students' perception about frequency of using Google Translate to complete assignment.
- Figure 6:** Students' views about exploring the reliability of Google Translate as a tool for vocabulary acquisition
- Figure 7:** Assessing the quality of translations provided by Google Translate
- Figure 8:** Students' recall ability of translated words
- Figure 9:** Students' views about the effectiveness of using Google Translate on their vocabulary

Table of contents

Dedication	I
Dedication.....	II
Acknowledgements.....	III
Abstract	IV
List of Abbreviations	V
List of Tables.....	VI
List of figures	VII
Table of Contents.....	IX

General Introduction

Introduction	1
1.Research Questions.....	2
2.Hypotheses	3
3.Background Significanc.....	3
4.Aim of the Study.....	4
6.Research Design	4

Chapter one: Machine Translation and Google Translate

Section One: Machine Translation

Introduction.....	6
1.1.1. The concept of Machine Translation	6
1.1.2. Historical background of Machine Translation.....	8
1.1.3. Machine Translation Approaches.....	9
1.1.3.1. Direct Approach.....	10
1.1.3.1.1. Rule based Approaches.....	11
1.1.3.1.2. Interlingua Approach.....	11
1.1.3.1.3. Transfer Approach.....	12
1.1.3.2. Corpus-based Approaches.....	13
1.1.3.2.1. Statistical Approach.....	13
1.1.3.2.2. Example-based Approach.....	14
1.1.4. Neural machine translation.....	15
1.1.5. Contributions of Machine Translation	17
1.1.6. Limitations of Machine Translation	18
Conclusion.....	20

Section 2: Google Translate

Introduction.....	21
1.2.1. An overview of Google Translate.....	21

1.2.2. How does Google Translate work?.....	22
1.2.3. Writing modes on Google Translate.....	23
1.2.4. Quality of translations on Google Translate.....	26
1.2.5. Academic utilization of Google Translate.....	27
1.2.6. Benefits for using Google Translate.....	30
1.2.7. Pitfalls of Google Translate.	31
Conclusion.....	33

Chapter 2: Vocabulary and memory

Introduction.....	35
2.1.1. The concept of vocabulary.....	35
2.1.2. Types of vocabulary.....	36
2.1.3. The concept of memory.....	37
2.1.4. Types of memory.....	38
2.1.5. Google Translate impact on memory and vocabulary	40
Conclusion	41

Chapter 3: Research Methodology, data analysis and discussion

3.1. Research Methodology.....	45
3.1.1. Introduction.....	45
3.1.2. Sampling	45
3.1.3. Research design	45

3.2. Data analysis and discussion..... 47

3.2.1. Analysis of the task.....48

3.2.2. Analysis of the questionnaire..... 52

3.2.3. Discussion of the results..... 66

Conclusion..... 67

General Conclusion.....67

Recommendations.....68

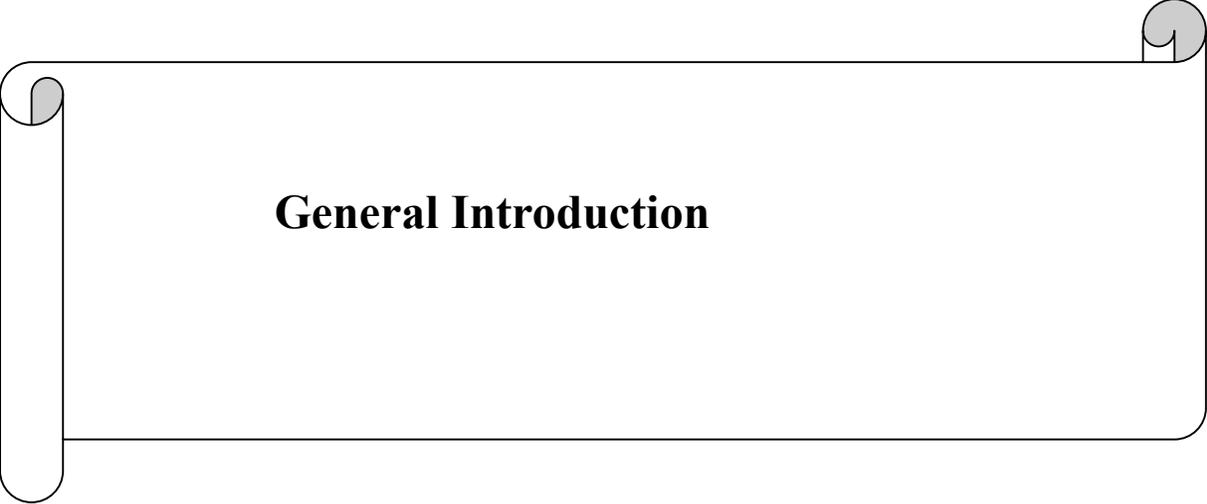
Limitations of the study..... 69

References71

Appendices.....80

Abstract in Arabic.....84

Abstract in French.....85



General Introduction

Introduction

Over few decades, the translation industry has seen significant advancements with the introduction of new technologies that have revolutionized the way translations are done. One of the most significant advancements in the translation industry is machine translation, which uses AI to translate text from one language to another. This technology has been around for several years, yet recent developments in machine learning and neural networks have made it more crucial than ever before.

Machine translation or MT for short refers to the use of automated software or applications to convert text from one language to another. MT has transformed the way we communicate and learn. As it has had an impact on foreign language learning. For one, the availability of MT tools has made it easier for learners to translate text from a foreign language into their native language, allowing them to better understand the content. This, in turn, has helped to break down language barriers and has made it easier for people to communicate across different languages. MT has various tools, including DeepL; Bing Microsoft Translator, Systran Translate, and Google Translate. This latter is the most popular among language learners, particularly those learning English as a foreign language (EFL). It can be defined as a free online translation tool that allows users to translate words, phrases, and entire sentences from one language to another using algorithms and computer systems.

One of the most critical aspects of language learning is memory and vocabulary mastery. EFL learners are often challenged with the task of memorizing and retaining new vocabulary words, which can be a daunting task. However, the availability of Google Translate has made it easier for learners to translate words and phrases in real-time, enabling them to communicate and understand better.

The impact of GT on EFL memory and vocabulary mastery has been the subject of much debate in recent years. While some argue that the tool can help learners build their vocabulary and improve their memory. Others believe that it can hinder their language learning progress.

Proponents of GT argue that the tool can help EFL learners build their vocabulary by providing them with instant translations of words and phrases they encounter in real-life situations. This can help learners develop a better understanding of the language, making it easier for them to communicate effectively. Additionally, the tool can help learners memorize new vocabulary words by allowing them to practice and apply the words in different contexts.

On the other hand, critics of GT argue that the tool can hinder EFL learners' language learning progress by discouraging them from engaging in active learning. By relying on the tool for translations, learners may miss out on opportunities to practice their language skills, making it more challenging for them to build their vocabulary and improve their memory retention.

Despite the ongoing debate, it is clear that GT has had a significant impact on EFL memory and vocabulary mastery. While the tool can be a useful aid for learners, it is essential to use it wisely and in conjunction with other language learning techniques to achieve the best possible outcomes.

In the light of what has been discussed above, this study aims to investigate the impact of GT on EFL learner's memory and vocabulary mastery.

1. Research Questions

The objectives of this study are to provide answers to the following questions.

- How does today's MT impact the language learning process?
- Does the use of GT enhance or hinder EFL learners' vocabulary?
- How can GT affect EFL learners' memory?

2. Hypotheses

The following hypotheses have been developed in response to the aforementioned research questions and the researchers will now try to confirm and verify the veracity of the questions

- H1: MT can have positive impact on EFL learning process if it is used correctly
- H2: GT can enhance EFL learners' vocabulary if it is used wisely
- H3: GT can affect EFL learners' memory negatively.

3. Background significance

Translation is one of the trickiest facts that provide an opportunity for individuals to develop the connection between two cultures to get messages, element, and literary artistic parts. It delivers one culture to another. In this globalized world translation has been developed through the new technological innovation which has combined science with computers to create a new system called MT. It has many tools the most commonly known is GT. It makes the translation process easier and helps foreign language learners to improve their linguistic skills. However, it is not progressed to the point that learners can rely on it. Thus, this study is conducted to investigate the impact of Google Translate on EFL learners' memory and vocabulary mastery.

4. Aim of the study

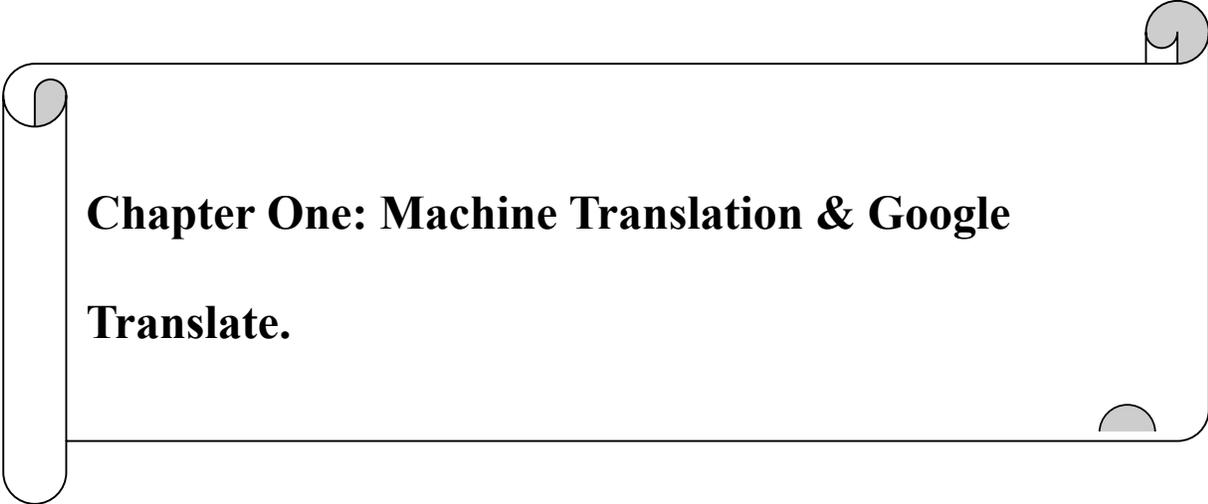
This study aims to investigate the impact of GT on EFL learners' memory and vocabulary mastery. The study seeks to identify any strengths and weaknesses associated with the use of GT in EFL learning. This research will contribute to the existing literature on the use of technology in language learning, particularly in the EFL context, and provide insights into the effectiveness of GT as a language learning tool.

5. Research design

To answer the previously stated research questions, this study will employ a mixed method. The information will be gathered in the English department in Ibn Khaldoun University of Tiaret. The research sample consists of third-year students who have taken translation classes. The researchers will use a translation task and a questionnaire. The participants would be asked to translate a text using machine translation. After two weeks the same participants would be asked to translate the same text without using machine translation. Moreover, they will be asked to complete a questionnaire about the impact of GT on their memory and vocabulary mastery. Following that, the information gathered is going to be analyzed and compared. The final result would show the impact of google translate on EFL learner' memory and vocabulary mastery.

6. The structure of the Study

The current study is composed of three chapters, two for the theoretical part and one the practical part in addition to general conclusion and introduction. The first chapter of the theoretical part would be divided into two sections. The first section sheds the light on the concept of MT, while the second provides an overview of GT. The second chapter of the theoretical part would consist of only one section which would be dedicated to review the notions of vocabulary and memory. The third chapter would be concerned with the methodology of research. The analysis of the task and questionnaire in addition to the discussion of the results obtained from the investigation.



Chapter One: Machine Translation & Google

Translate.

Chapter one: Machine Translation and Google Translate**Section one: Machine Translation****Introduction**

MT has become an essential element of modern communication, facilitating the exchange of information across linguistic barriers. MT is an automated process that enables the translation of text from one language to another by using computers and software applications. It has a rich history that dates back to the mid-twentieth century and has undergone significant developments since then. This section provides an introduction to MT, presenting an overview of its definitions, its historical background, followed by its approaches. At the end, it provides insights on its contributions and limitations. Understanding these fundamental aspects of MT helps to appreciate its impact on EFL learners' memory and vocabulary mastery.

1.1.1 The concept of MT

There have been several investigations conducted on the definition of MT. However; so far none of the proposed definitions seem to be wholly acceptable. This might be a result of MT's extensive background or a wide range of different perspectives. The following passages are intended to shed the light on certain definitions that were provided by some academics and researchers.

MT is the process of converting a text from one language to another using a computer." (Cambridge English Dictionary online). In addition, Alhaisoni and Alhasyony stated that "MT is the process by which computer software is used to translate and [is] compatible with PC systems and smartphone systems." (2017, p.73) That is to say MT is a technology that enables computer software to automatically translate texts between languages and that the output of the translation

can be used on both PC and smartphone .Moreover, kohen and knight (2003) defined MT as the use of computer software to translate text from one natural language into another without human assistance , In line with this notion, the American translator's association claimed that (MT) is the process of translating text using automated programs without human assistance.

Whereas other scholars countered that the above definitions seemed to be invalid, since human contribution is not taken into account. According to Hutchins and Somers (1992) machine translation (MT) is the process of translating from one language into another using machine systems and software, either involving or excluding the assistance of a human translator. They asserted that post-editing and review by humans frequently enhance machine translation's outcome.

To sum up, we can state that MT, is a branch of computational linguistics and artificial intelligence that combines computer science with translation to convert text of speech from one language into another. The goal of using MT is to enable foreign language learning and communication between individuals or groups who speak different languages by automatically translating text or speech from one language to another. As it can be used for a variety of purposes, such as facilitating international business, improving global collaboration, and enhancing accessibility to information, as for the increasing interaction between humans and machines, the goal is to create a seamless and efficient partnership between humans and technology. This can be achieved through the development of intelligent systems that can understand human language and behaviour, and respond appropriately to human needs and preferences. The ultimate goal is to enhance human productivity and well-being, while also improving the efficiency and accuracy of machine-based processes. However, machine translation systems often make errors, especially when dealing with complex sentences. Thus, it seems legitimate to question its impact on learning

foreign languages and subsequently, its impacts on memory retention, reasoning and thinking in foreign languages. Human assistance may be required to limit the frequency and the consequences of those errors and to improve the quality of a given translation output.

1.1.2 Historical Background of MT

The idea of MT came first to the fore in the seventeenth century, and began to be applicable in the 20th century. In the mid- of 1930s Georges Artsrouni, a French-Armenian, and Petr Troyanskii, a Russian submitted applications for "translating machines"

The more significant of these two is Troyanskii's work, which includes a plan for coding grammatical roles between languages (based on Esperanto), and a description of how analysis and synthesis might operate, in addition to developing a system for computerized bilingual dictionary. (Hutchins & Somers, 1992)

In 1949, Weaver submitted a memorandum on translation that is regarded as the basic foundation for the area of MT. It was reported during the same period when the first general-purpose of electronic digital computers was being developed (Weaver 1949). In a short while later, numerous American academic institutions started working on (MT) research, and the first demonstration of the technology's viability took place in 1954. It was collaboration by IBM and Georgetown University, which carefully picked a group composed of 49 Russian phrases translated into English using a very limited grammar rules and a relatively small vocabulary. Despite the system's lack of Scientific usefulness, it had received a lot of media coverage in the United States, as it encouraged the U.S. government to make significant projects that aimed at developing MT programs and spread it on a massive scale. (Hutchins, 1997)

In 1966, it appeared the infamous ALPAC report with its crippling repercussions. The MT study was to be assessed by a group called the Automatic Language Processing Advisory

Committee. In its research from 1966, it ended up deciding that machine translation (MT) is slower, poorer, and costs twice as much as human translators. Instead, it advocated for the creation of automated translator assistance systems. Research and financing for MT almost ended after the ALPAC report, especially in the United States (Quah, 2006).

The MT research community did not experience much of a rebirth until the late 1970s. In the US, the Systran system was implemented to replace the outdated IBM system for translating Russian technical and scientific publications. In 1976, Canada had launched the *Méteo* weather forecast translation system. The advent of MT was characterized by numerous other studies conducted in many nations during the 1970s. Particularly in France, where a system was designed for translating texts on Russian mathematics and physics into French. A Chinese-English MT system named CULT was created in Asia by a Hong Kong university. Later, starting from the 1970s, with the first translation software for personal computers, MT became widely available throughout the world. Consequently, the first translator workstations appeared in 1990. Lastly, in the last 5 years, MT has evolved into a web-based service (Hutchins, 2005).

1.1.3. MT Approaches

Since the birth of MT area, there have been several approaches used to develop machine translation process, and each approach has its own benefits and drawbacks. Quah (2006), noted that MT process can be divided into three main paradigms: the direct approach, rule-based approach, and the corpus-based approach.

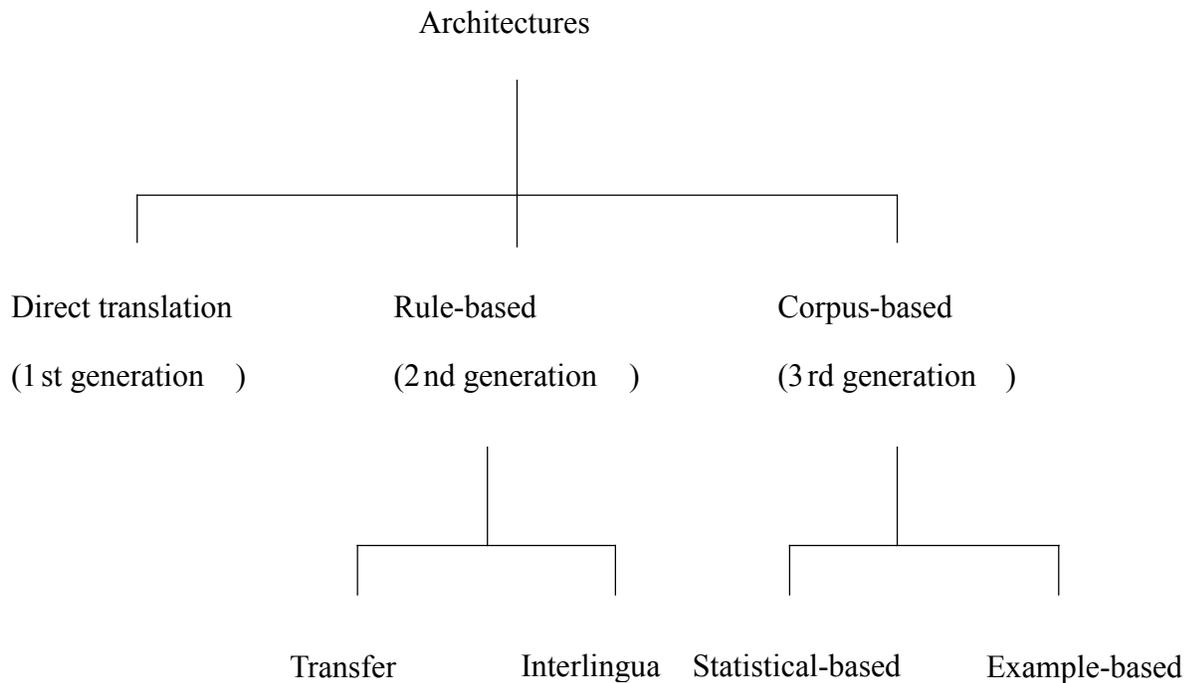
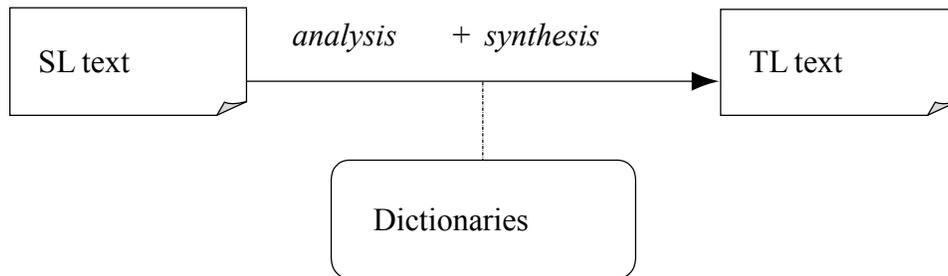


Figure1: Machine translation architectures

1.1.3.1. Direct Approach

The direct approach was also known as the first generation, it was the first to be designed, and therefore it was quite simple and took a considerable amount of time to function. This method cannot analyse the source-language linguistically. Furthermore, it was unable to clarify unclear passages, cope with idioms and proverbs, or translate passages of dissimilar languages. Typically, this kind of machine translation system is made to translate couples of languages that are closely related and share comparable grammatical structures... In direct translation systems, the source-language text is put down as a group of words, and then goes under various processes to convert the original language words into the target-language words, then rearrange them until they result

a series of symbols in the target language. For instance, standard contrastive differences like the order of adjectives and nouns in English (adjective + noun) and French (noun + adjective), for example, "the blue chair" ("la chaise bleu"). (Quah, 2006)



SL = source language; TL = target language

Figure 2: Direct translation model

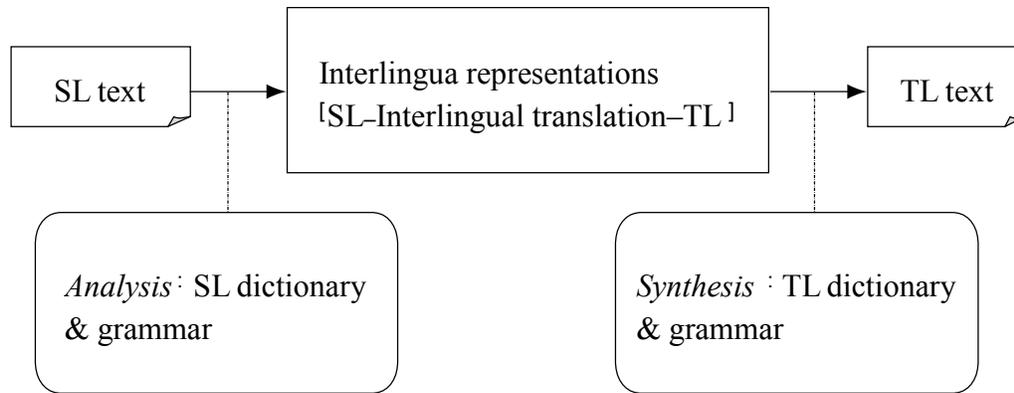
1.1.3.2. Rule-based Approaches

The rule-based approaches examine the original text and use morphological, syntactic, and/or semantic rules to formulate the target text. There are two different approaches: the intralingua approach and the transfer approach, they were created as a second-generation method to extend and develop the previous direct machine translation systems.

1.1.3.2.1. The Intralingua Approach

The shortcomings of the first-generation system led to the development of the intralingua approach. The Interlingua approach is arguably the most attractive for multilingual processes. Each analytical module can be completely separated from all other analytical and production component, the source-language text is converted into a purely complex representation that catches all of the important syntax and semantics data, which can then be translated into certain target languages, its main goal was to operate in stages as the mediator between many natural languages. During the examination arrange, the original text is dissected and changed into its Interlingua

version... Target- dialect sentences are created from this Interlingua version with the assistance of dictionaries and linguistic rules. (Quah, 2006)



SL = source language; TL = target language

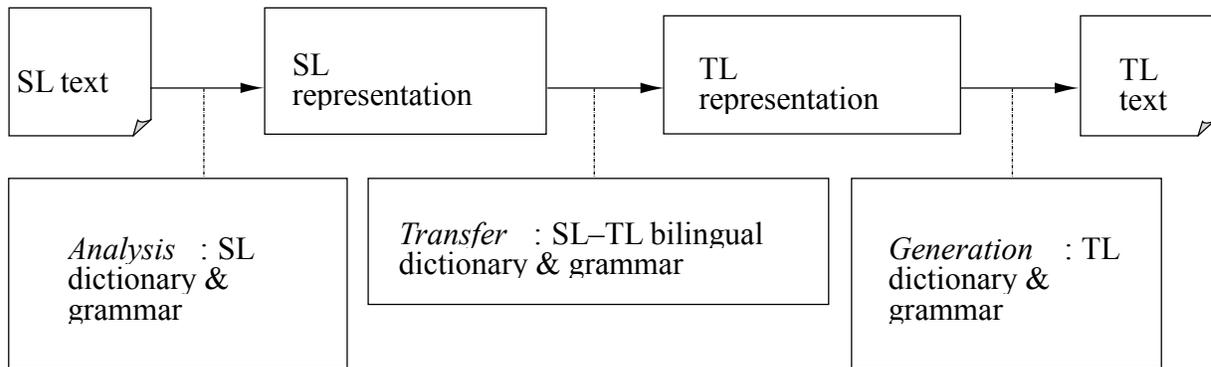
Figure 3: Interlingua model

1.1.3.2.2. The Transfer Approach

Due to the inadequacies of the Interlingua approach, a stronger rule-based interpretation approach, called transfer-based approach, has been found. Transfer-based machine interpretation is comparable to Interlingua machine interpretation in that it makes a translation from middle representation that imitates the meaning of the initial sentence. Not at all like Interlingua machine interpretation, has it depended in portion on the dialect sets included within the interpretation. Due to the auxiliary contrasts between source and target languages, an exchange framework can be isolated into three particular stages: i) examination, ii) exchange and iii) generation. Within the first stage, an SL parser is utilized to produce a syntactic representation of an SL sentence. Within another arrange, that comes about of the primary arrange are changed into an identical TL-oriented representation. Within the last step of this interpretation strategy, a TL morphological analyser is

utilized to produce the ultimate TL content. This translation method can produce reasonably slightly elevated translations with an efficiency of around 90%.

(Quah2006)



SL = source language; TL = target language

Figure 4: Transfer model

1.1.3.3. Corpus Based Approaches

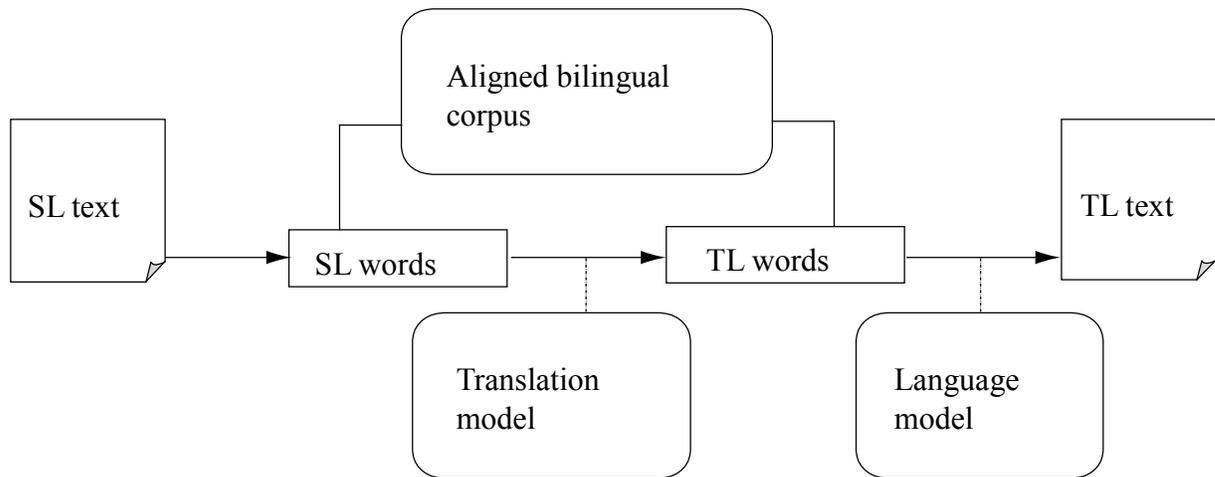
Corpus-based methods emerged in the late 1990s, and they include two distinct sub approaches: statistical and example-based. The latter are two different ways of creating new translations from linguistic information in a corpus. All corpus-based machine translation systems rely on a set of reference translations that contain the original text and its translations, linking source and target language texts and determining the same translation using statistical methods or by associating various corpus examples.

1.1.3.3.1. Statistical Based Approaches

This approach is distinctly different from the rule-based approaches, which uses pre-defined linguistic rules to analyse the original text and produce translations.

In the statistical-based approach, source-language content is first divided into group of words and expressions; the source-language sections are at that point compared to an existing expansive

adjusted bilingual corpus comprising of unique writings and their interpretations, and a factual strategy is at that point utilized on the adjusted bilingual corpus to get unused target-language fragments. From the modern sections, utilizing the hypothesis, a unused target- dialect content is created (Carl and Way 2003)



SL = source language; TL = target language

Figure 5: Statistical-based model

1.1.3.3.2. The Example Based Approach

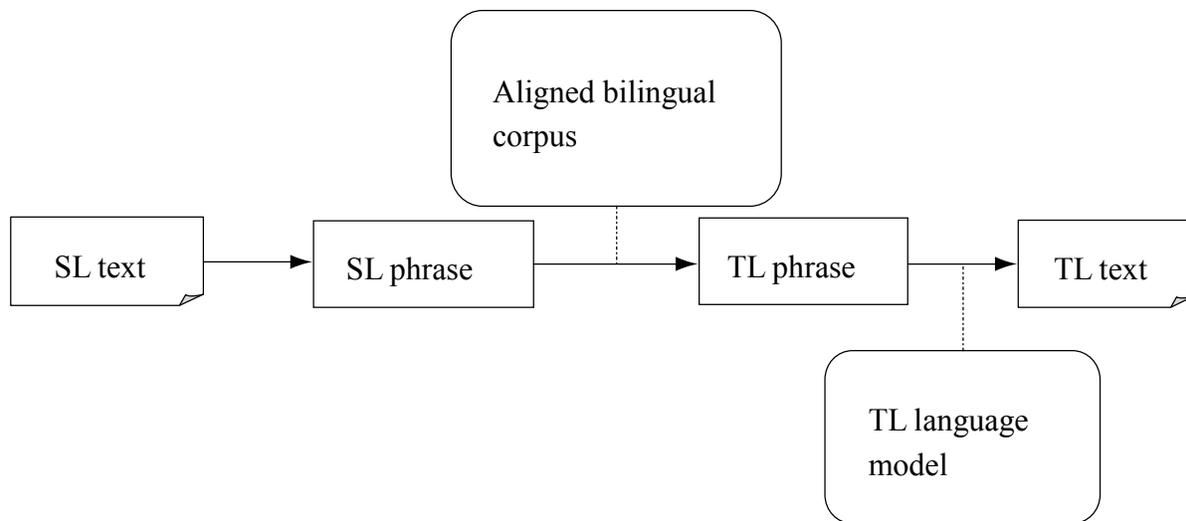
This system was first introduced by Nagao in the mid-1980s. Sato and Nagao (1990) noted (as described in Quah 2006), “the basic idea of an example-based translation is to translate a source sentence by imitating the translation of a similar sentence in the database” (p. 81). That is to say, the core element behind this approach is the translation of the original text can be done by mimicking the previous translation that is stored in the computer system (memory).

Example-based machine translation (EBMT) is categorised by having a bilingual corpus with analogous translation as the starting point, with similar texts as the main knowledge. The EBMT system takes a series of sentences of the original text (source) and matches each sentence

with its corresponding translation in the target language point-to-point. These examples are used to translate similar types of sentences from the source language to the target language. EBMT has four tasks: sample collection, sample bank and management, sample application and synthesis.

The concept of translation by analogy is fundamental to example -based machine

Translation The principles of analogue translation are codified in example-based machine translation, and example translations are used to train such systems. (International Journal of Computer Science Issues)



SL = source language; TL = target language

Figure 6: Example-based model

1.1.4. Neural Machine Translation

Recently, Kalchbrenner and Blunsom (2013), Sutskever et al. (2014), and Cho et al.(2014) suggested a new method for machine translation called neural machine translation. Contrary to traditional phrase-based translation system, which includes numerous steps (see, for instance, Koehn et al.,2003), Using discretely controlled small sub-components, neural machine translation tries to construct and develop a single, sizable neural network that can read a sentence and provide the right translation (Bahdanau, Cho and Bengio, 2015).

The majority of the proposed NMT models are encoder-decoder families, with an encoder and decoder for each language (Sutskever et al., 2014; Cho et al., 2014), or they use a language-specific encoder applied to each sentence whose outputs are then compared (Herman and Blunsom, 2014). A source sentence is read and encoded by an encoder neural network into a vector with fixed-length, the encoded vector is subsequently translated by a decoder, the encoder and decoder for a language pair make up the entire encoder-decoder system, which is collaboratively trained to increase the likelihood that a translation will be accurate given a source sentence. (Bahdanau, Cho and Bengio, 2015).

According to Bahdanau, Cho and Bengio (2015), this encoder-decoder method could have a problem because a neural network needs to be able to fit all the information from a source sentence into a fixed-length vector, due to this, the neural network may find it challenging to process long sentences, especially those that are longer compared to the training corpus's sentences. Cho et al., (2014) demonstrated that a basic encoder-decoder's performance does certainly decline quickly as the length of an input sentence rises.

In order to overcome this problem, Bahdanau, Cho and Bengio presented an extension to the encoder-decoder paradigm that concurrently learns to align and translate, according to them, the suggested model (soft-)searches for a set of spots in a source phrase where the most pertinent information is present each time a word in a translation generated, following that, the model predicts a target word using the context vectors related to all of the aforementioned target terms from the past, as well as these source positions. They add that the main distinction between this method and the fundamental encoder-decoder is that it avoids attempting to compress the entire input sentence into a single fixed-length vector. Instead, it adaptively selects a selection of these

vectors by encoding the input sentence into a sequence of vectors while translating and decoding. (Bahdanau, Cho and Bengio,2015)

1.1.5. Contributions of MT

As it has been described above, MT is the practice of using artificial intelligence (AI) systems to translate texts from one language to another. Due to its speed, flexibility, scalability, and universal accessibility, it has simplified and made translation process easier. Here are some contributions of machine translation:

1. **Speed:** one of the main advantages of MT is its speed, as MT can translate a 1000s of words within a second (United language group, 2018).
2. **Cost effective:** MT can reduce costs associated with human translation. It can be a cost-effective solution for translation needs. Traditional human translation services can be expensive, but machine translation can offer a more affordable option. Particularly for large scale projects, making it an attractive option for businesses and organisations (kohen, 2009).
3. **Language Learning:** MT has also been used in language learning to help learners translate texts and improve their understanding of the language. MT can generate significant numbers of translations each day, and its capacity to rapidly understand new terms and concepts customizations is difficult for learners to replicate. In addition, it has provided learners with access to authentic materials in their target language and provides them with the option of verifying grammatical and spelling mistakes, which has enhanced their language proficiency (Raheem, 2020).

MT has long been regarded as an invaluable resource for language learning systems.

The ability to deliver tens of millions of translations every day, as well as the ability to swiftly absorb new terminology alterations, is of enormous significance in the field of learning. MT also allows learners to check for spelling and grammatical problems.

4. **Improved Communication:** MT allows people who speak different languages to communicate with each other more easily. This can be particularly helpful in business, international relations, and other contexts where language barriers may be a challenge. (Hutchins & Somers, 1992.)
5. **Worldwide languages available:** one key benefit of MT is the ability to translate different worldwide languages.

1.1.6 Limitations of MT

We cannot deny that MT has altered the way translation is performed with a single click, you can translate a large amount of data in a short period of time, and a low cost; meanwhile, we cannot afford to turn a blind eye on its limitations.

Argondizo (2023) has summarized it in:

1. **Quality and Accuracy Issues:** one major problem of MT is the lack of accuracy and fluency issues; a machine translator does not return to double-check its work. There is no pause-and-repeat function that allows it to go over a phrase multiple times before accurately transcribing it. When used to get a general idea of a passage, machine translations are most effective. However, it will not provide an excellent rate of correct interpretation from one language to another. Therefore, a human touch is needed to examine and edit a translation for the most precise result.

2. **Context:** MT systems are extremely verbatim; they could not convey the exact meaning as human translators do. MT often faces issues to capture the context in which complex words and phrases are used, which would result misinterpretation. In addition, when it comes to idiomatic expressions and colloquialisms, a machine will lack nuances or contexts that would make a passage accurate and relevant.
3. **They cannot think:** Machines are incapable of thinking and asking questions... To understand words and determine the most precise translation into another language, they employ software. There are several languages for which there is no exact translation. Machines either translate to a closely related (but incorrect) word or have obvious translation errors.
4. **Limited Creativity:** MT systems lack the creativity and imagination of human translators, and are therefore limited in their ability to produce translations that capture the nuances and subtleties of language.

In addition, Zakir & Nagoor (2017) have outlined in their study the challenges of machine translation in:

1. **Word translation:** One of the most difficult challenges in MT is accurate word translation. A single word can have multiple interpretations in many languages. Humans can understand the correct meaning of a word (with different meanings) by looking at the context, but computer systems cannot.
2. **Phrase Translation:** Phrase translation is considered as a big dilemma in MT. Idioms contains underlying meanings, which cannot be translated word for. Hence, proper translation sentences are a big hurdle for machine translation.

3. **Syntactic Translation:** Another problem with MT is a syntax translation problem. This problem occurs Due to various differences between languages. It depends on the degree of correlation between the two languages. If languages belong to the same family. For example, English and German belong to the Indo-European language family, Tamil and Telugu belong to the Dravidian language family.
4. **Semantic Translation:** another difficulty in MT is resolving the pronominal anaphora issue (Pronoun Resolution). An anaphor is a term or expression that refers to another term or expression in a single paragraph.

Conclusion

To conclude, this section has aimed at revealing some definitions related to the MT field, followed by its historical background. Moreover, it has mentioned the different approaches of MT, including; direct approach, rule-based approaches, corpus-based approaches, and NM It also highlighted its contributions which are: speed, cost effective, language learning, improved communication and worldwide languages availability. As well as its limitations which are: accuracy and quality issues, context, they cannot think, limited creativity, word translation, phrase translation, syntactic translation, semantic translation. Overall, MT has the potential to facilitate communication and understanding between speakers of different languages as well as foreign language learning, yet it should be used with caution and in conjunction with human expertise to ensure accurate and culturally appropriate translations.

Section Two: Google Translate**Introduction**

Google Translate has become the go-to MT tool for millions of people around the world. It is a reliable and efficient tool that has made communication between different languages easier. In this section, we will provide an overview of GT, discuss how it works, its modes, its quality of translation, its academic as well as its benefits and pitfalls. We will delve into each of these areas to give readers an in-depth understanding of the tool.

1.2.1 An overview of GT

GT is one of the most popular online translation tools, which works on computers, cell phones and tablets systems with multiple features (Gestantil, Nimasari and Mufanti, 2019). Moreover, Graesser and Cai (2014) said: “Google translation is an automatic machine-translation service provided by Google Inc. It translates directly or via the use of English as a medium one written source language to another (Boitet et al. 2009). Ghasemi and Hashemian (2016) also talked about GT and said that it is a service provided to translate various sentences from one language to another, it provides translations in 90 languages and it can translate not only words, but also a phrase, a section of text, or a web page. Also, Yanti and Meka (2019) said: “translation service, GT offered by Google is highly visited online by users around the world”. Also, Hampshire and Salvia (2010) argue that GT is the most common and popular MT system among its users.

GT is one of the most widely used translation online resources, Google created this free, multilingual MT service to translate text, speech, images, websites, and real-time video from one language into another (Alhaisoni and Alhaysony, 2017). According to Kirchhoff, Turner, Axelrod & Saavedra (2011), GT is a statistical method for extracting text from voluminous web data that corpus-based, it obtains language from these sources.

Comprehensively, Google Translate is a multilingual neural machine translation tool that was launched in 2006 it translates texts, documents and websites from one language into another, and supports 100 languages. It provides a website interface, a mobile app for android and IOS, and an API that helps developers build browser extensions and software applications.

1.2.2 How does GT Work?

GT is a rule-based translation tool that uses statistical models to determine word translations. It first translates the text into English before moving on to the target language (Kumar, 2012). According to Ghasemi and Hashemian (2016) GT was first relied on a rule-based translation, following that; it used an SMT that employed a statistical model to ascertain the translation of word in 2006, SMT makes use of bilingual text corpora which is database of sentences in the target language and the source language. During the translating process, GT searches different documentations go attain an adequate translation pattern according to previous human- translated texts wherein the appropriateness of the final product highly depends on the number of stored texts translated by man (Ghasemi and Hashemian, 2016). GT switches from sentence-based translation to Neural Machine Translation employing Artificial Intelligence, which imitates the cognitive processes of humans, to increase fluency and accuracy (Russel& Norvig, 2010), it is based on both Neural MT and human contribution via its translate community. In order to find the most pertinent translation, GNMT considers the entire text and context. It then rearranges and adjusts the text to make it appear human-made with appropriate grammar and vocabulary (Wu et al., 2016); this indicates that GT seeks to minimize errors as much as possible.

1.2.3. Writing modes on GT

According to Bin Dahmash (2020), there were five modes to write in English using GT Application. “These modes were copying and pasting a text, taking a photo of the text, typing letters to form a word, drawing letters with fingers on a touch screen, and dictating the desired word with one own’s voice”.(Bin Dahmash, 2020)

Figure 1 represents three modes which are: copying and pasting a text (by selecting "paste"), taking a photo by tapping on "images", and dictating with voice by tapping on the voice record button

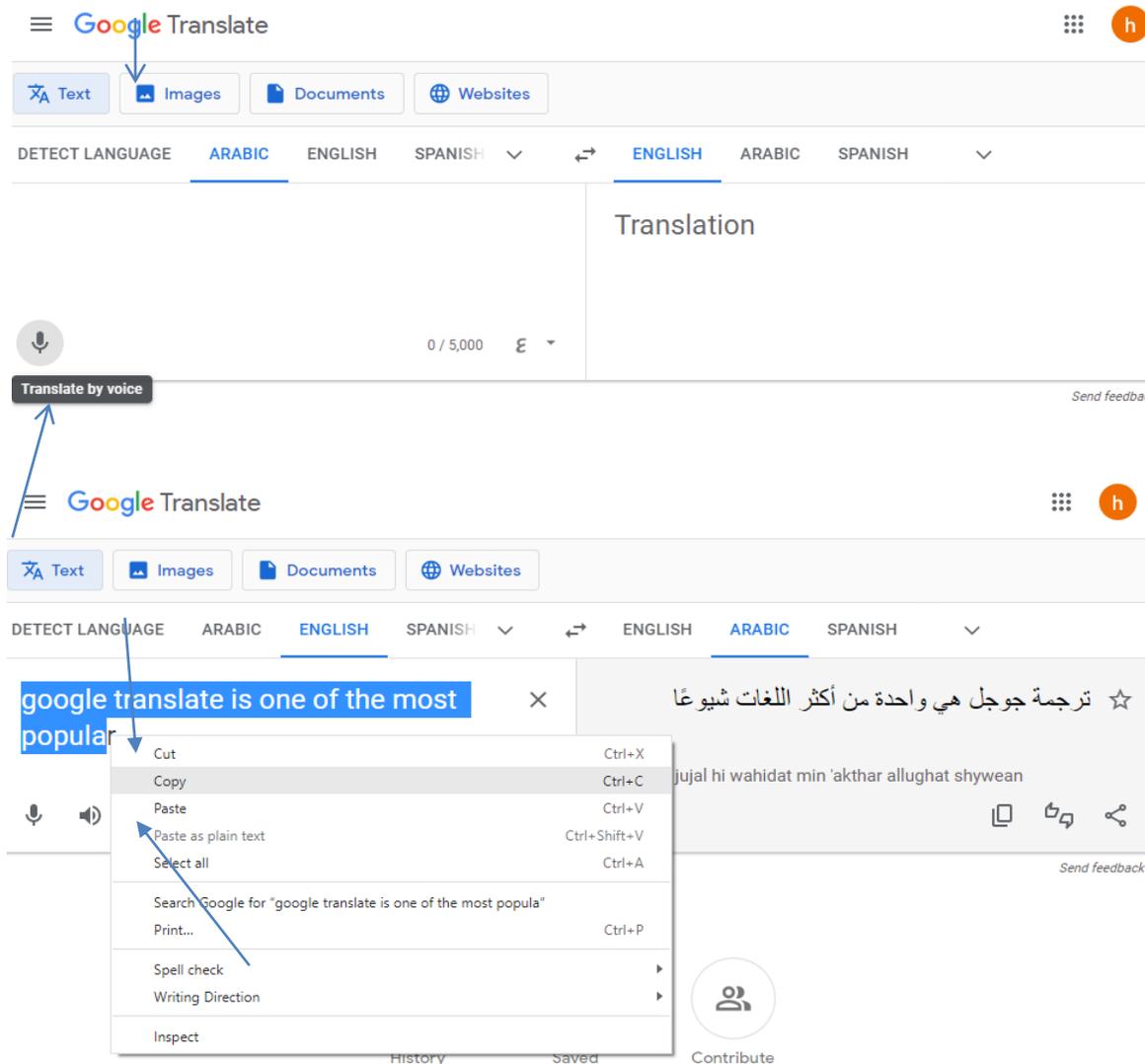
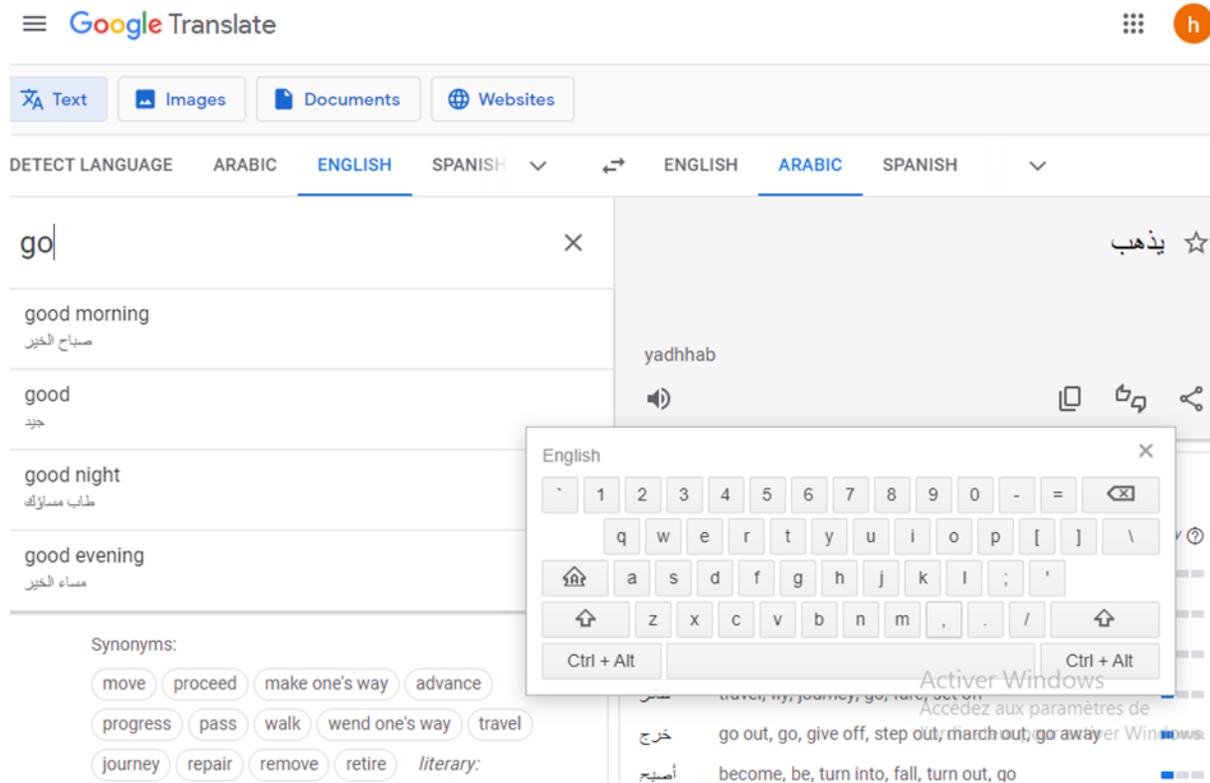


Figure 2: illustrates the mode of handwriting or writing with fingers. After drawing the word's initial letter, the keyboard will propose word's to finish it (Bin Dahmash, 2020)



Figure 3 represents the fifth mode which is typing letters to form words



1.2.4 Quality of translations on GT

Because it is a machine and the possibility of making mistakes is contained, many researchers did studies testing the quality of GT. For the first time, Aiken and Balan (2011) conducted research and evaluated the quality of GT over 50 distinct languages, not just a pair of languages, at the end of the investigation; they noted that GT does far better translations across European languages than those pairs of languages which evolve Asian languages. Patil and Davies (2014) assessed the precision of GT for translating crucial medical statements from English into 26 languages and discovered that the translation's precision varies depending on the language. Groves and Mundt (2015) investigated a text that GT has translated from Malay and Chinese into English and found that the text had translation mistakes. Also, Vidhayasi, Keyuravong, and

Bunsom (2015) examined the effectiveness of GT for translating a legal document from Vietnamese into English. The document related to the terms and conditions on an airline website, and it was discovered that the translation was inexact and difficult to understand and potentially could harm the airline's reputation with passengers and other costumers (Bin Dahmash, 2020)

As for English-Arabic translation, Alsalem (2019) said: "the quality of GT's English-Arabic translations is invariably low and cannot be trusted unless a competent human being independently reviews them". In addition, GT mistakes in translations from English to Persian and vice versa were examined by Ghasemi and Hashemian (2016) and they found no differences in the quality of human-translated documents that GT searches affects the quality of its translations (Karami, 2014).

1.2.5 Academic utilization of GT

The use of GT in the English Educational Study Program has been familiar (Yanti and Meka, 2019). Unquestionably, students are increasingly using GT inside and outside the classroom for many learning purposes, the most common are vocabulary learning, reading comprehension, and writing tasks (Alhaisoni and Alhaysony, 2017). GT is the second most popular online tool among language learners due to its simplicity, it lowers their learning worries while promoting their reading and writing skills in foreign languages (Herlina et al. 2019). Nevertheless, GT does not provide a clear explanation because it has neither a grammatical function nor contextual translation (Herlina et al. 2019). Accordingly, learners' use of GT minimized its role to dictionary-like in vocabulary acquisition (Clifford et al. 2013). GT is important in providing students with a broad understanding of texts in reading comprehension, but it is ineffective in delivering grammatical answers (Herlina et al., 2019). For low language proficiency students, using GT to perform writing activities is satisfactory, and they gain more from GT than students with high

fluency do (Herlina et al., 2019). Yet, according to Fredholm (2015), students with a high level are more likely to identify errors made by GT. GT, according to Chon and Shin (2020) could help the development of EFL learners' writing process especially writing fluency, cohesion and more complex sentences with accurate vocabulary. Consequently, Tsai (2019) argue that the use of GT indicates significant writing quality, rather than students' self-written reports in which they used more advanced vocabulary, fewer spelling mistakes and better grammatical structures.

Alhaisoni and Alhaysony (2017) reported on the opinions of English-majoring students in Saudi Arabia on the use of GT. They employed a quantitative method, and the opinions of the students were gathered through a questionnaire, and they discovered that the majority of the participants in their study utilized GT to decipher new words, help them finish their written projects, and when reading in English. They said: "the students had very positive attitudes toward GT as it is free and easy to use and translates text quickly, its translation is better than their own, and it is helpful for learning vocabulary".(Alhaisoni and Alhaysony, 2017,p. 79).

After the use of GT to compose assignments, views of EFL students majoring in English in Taiwan were investigated (Tsai, 2019). Freshmen, sophomores, and seniors majoring in English were participated in this study, which examined the impacts of using GT for translating tasks with English. Eighty-four students' written work and questionnaire responses were used to gather data. The students were required to translate two texts into English, one without GT aid and one with it. To compare the students' writing outputs with and without the aid of GT, a computerized evaluation was conducted. He declared that a "second audience" can be made available to EFL students using GT. EFL students, for instance; can utilize GT to instantly convert their thoughts and ideas into English when having difficulties to do so in the language. The texts of GT can provide them some early suggestions on word choice and sentence construction for later reference

and editing in their writing in English (Tsai, 2019,p. 520). Tsai (2019) discovered that the students' writing assignments that used GT had less grammatical and content problems. According to the study, students regarded using GT to aid them with their English and helped them choose vocabulary words.

Another study done by Bin Dahmash (2019), who looked at the tools and resources a group of Saudi friends at a university used to comprehend English on social media, GT was among the tools used to correct English as a second language. Seven female participants majoring in English language and translating were participated in focus groups, semi-structured interviews, and online log during three-months, and she discovered that GT App was mostly utilized by Saudi undergraduates to improve and correct their English. According to her research, participants used GTA to test their accuracy with English spelling in two different ways: firstly, by typing a word in English (if the word was translated, it must have been spelled correctly and if not then it was misspelled), and by writing the word in Arabic and tapping to translate it into English to see the word spelled correctly".(Bin Dahmash, 2020). She asserted that the use of GTA to examine a word's meaning in English illustrates how their academic major studies have influenced their everyday literacies, in one of their courses, they learned how to use GTA to help them translate documents from English to Arabic (Bin Dahmash, 2019,p. 174).

Amin (2020) systematically compiled earlier studies on the use of Google Applications in English learning and teaching on Google Scholar and ERIC digital databases, and discussed earlier research that looked at GT. She investigated thirty-four studies on Google applications for learning and teaching English without mentioning the app's name. She discovered that the Google applications typically enhanced English language learning and and that writing skills was the most

targeted. And she acknowledged that the use of GT in particular had impact on second language learners' translation abilities.

1.2.6. Benefits for using GT

As it always improves the quality of its translation, GT's advantages are growing.

- **Free translation tool:** GT is a free translation tool which was launched in 2006 (Orch, 2006). Since it has become a popular translation tool for FL learners, many students use GT to aid them in learning foreign languages because GT is free, simple to use and offers a quick translation process (Kumar, 2012). Also, Chandra and Yuyun (2018) said that it offers free access, to utilize it; users only need to download the app or access the website in a browser on their device, and Putri and Ardi (2015) confirmed that when they said that on the internet there are several machine translations that are available for free. However, Google Translate is the most utilized and popular (Aiken and Balan, 2011). It costs nothing to use GT internet connection is all you need to translate your text, document or website.
- **Easy tool:** GT is easy to install and easy to use in the classroom, students could translate everything they want easily. Medvedev (2016) said: GT is probably one of the easiest and most accessible tools to help users meet their translation needs. Moreover, Graesser and Cai (2014) declared that the software's widespread use is mostly due to how easy and quick it is to obtain translation.
- **Quick:** Students have discovered the benefits of GT and they are using it frequently both inside and outside the classroom, because it offers fast and accurate duplicate translation services in a variety of languages (Medvedev, 2016). Also, Graesser and Cai (2014) saw that GT provides a means for those who need a quick translation to get their information. Google's Translate tool integrates with Google Chrome and Android devices to quickly

translate websites around the world. Users might access the translation outcome with a quick click (Chandra and Yuyun, 2018)

- **A helpful tool for language learners:** According to Valijarvi and Tarsoly (2012), GT is useful because it helps students accessing knowledge about the target language during the writing process. Students learn more about the studied language by using GT (Khatimah, Rahmawati, Ranchman and Pupsita, 2019). Meanwhile, Garcia and Pena (2011) said that the use of GT enables students with low proficiency levels to create longer texts. Similarly, Kazemzadeh and Kashani (2013) claimed that GT affects students with poor proficiencies to write texts with complex terms.
- **It is a memory translation program:** According to Alsalem (2019), Google Translate is translation memory software; it becomes better as more translation orders and corrections are processed.

1.2.7. Pitfalls of GT

GT still has drawbacks even if it offers some really fantastic advantages.

- **Context:** GT is inaccurate because it cannot understand the context. GT cannot recognize the cultural and linguistic rules in the specific country; it has not the knowledge that helps people to avoid the consequences of breaking those rules. Alsalem (2019) said that GT program frequently generates translations that are out of context, absurd, and irrelevant.
- **Grammatical errors:** with the lack of understanding of the context, both contextual and grammatical, GT makes errors. These can be small but impact the quality of multilingual content. Google Translate cannot give an error-free translation for longer

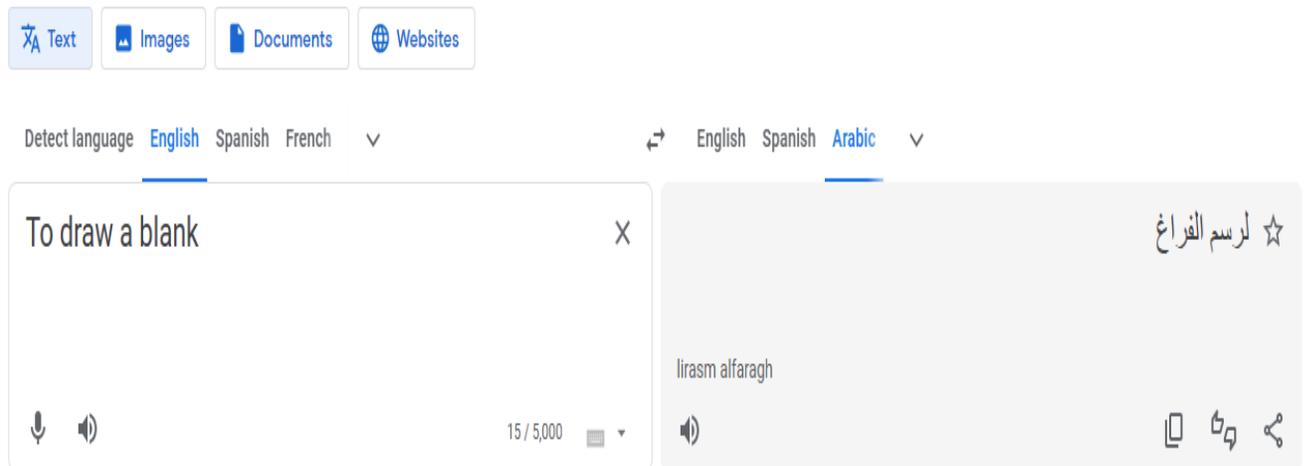
phrases or paragraphs since it often provides word-for-word translation (Medvedev, 2016). Moreover, it fails to translate idiomatic expression and metaphors, which may cause misunderstanding for the reader (Raza & Nor,2018). In addition, Maulidiyah &Malang (2018) saw that subject-verb agreement is difficult in GT use.

Examples about GT's errors

Figure 4 illustrates examples about GT's errors in English-Arabic translation

Example 1:

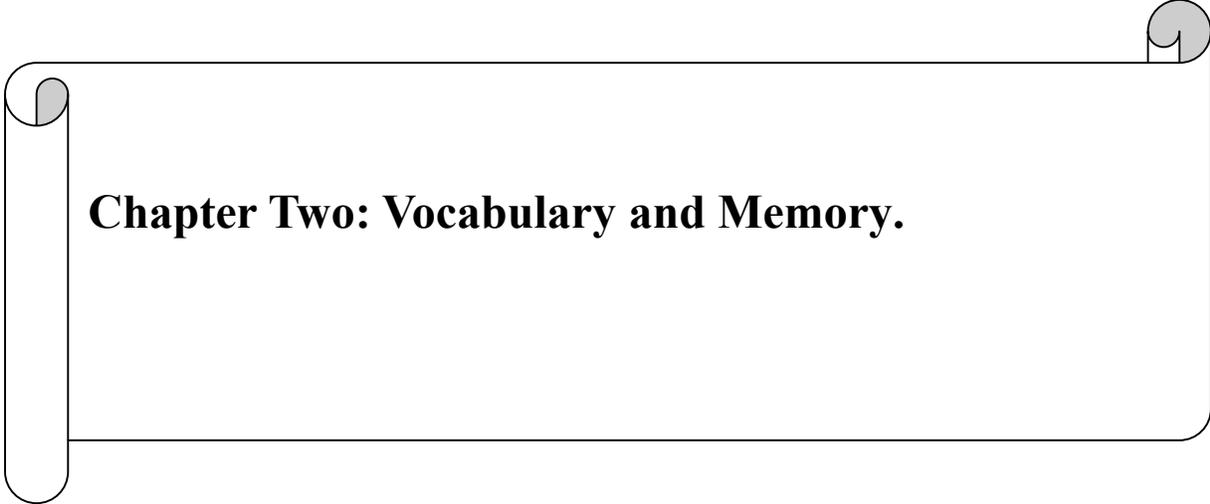
The screenshot displays a machine translation interface. At the top, there are buttons for 'Texte', 'Images', 'Documents', and 'Sites Web'. Below these, the source language is detected as 'Anglais - Détecté' and the target language is set to 'Français Arabe'. The English text on the left reads: 'The lime must be mixed into a solution before being added to the digester because dry lime would settle to the bottom in lumps, which is not only ineffective but the lumps take up digester capacity and are difficult to remove when cleaning the digester.' The Arabic translation on the right is: 'يجب خلط الجير في محلول قبل إضافته إلى الهاضم لأن الجير الجاف سوف يستقر في القاع على شكل كتل، وهو ليس غير فعال فحسب، ولكن الكتل تستهلك سعة الهاضم ويصعب إزالتها عند تنظيف الهاضم.' Below the Arabic text, there is a transliteration: 'yajib khalt aljir fi mahlul qabl 'iidafatih 'iilaa alhadim li'ana aljir aljafa sawf yastaqiru fi alqae ealaa shakl kutal , wahu lays ghayr faeal fahasb , walakina alkutal tastahlik sieat alhadim wayaseub 'iizalatuha eind tanzif alhadimi.' The interface also shows a word count of 253 / 5000 and various icons for text, images, documents, and websites.

Example 2:

- In the first example, GT was unsuccessful in accurately translating the term "digester." It translated it as "الهاضم"، whereas the correct translation is "صهريج".
- In The second example, GT failed to correctly translate the idiom as it translated it to "رسم الفراغ"، while the actual meaning of the idiom is to be unable to recall : "لا يتذكر"
- **Ethical concerns:** Pritchard (2008) said that some teachers forbid online translation because it impedes language learning and facilitates the way of cheating and plagiarism, and Alsalem (2019) supported him when she talked about GT and said that it has been noted that some students abuse this type of technological support, such as cheating to save time. Accordingly, it is important to train teachers and learners to use online translation properly (Fredholm, 2015).

Conclusion

In conclusion, it is evident that GT has revolutionized machine translation and made it easily accessible to millions of people across the globe. It has proven to be a reliable and efficient tool that has facilitated communication between different languages, ultimately bridging the gap between different cultures. Throughout this chapter, we aimed at providing readers with a comprehensive overview of GT, delving into various aspects such as its functioning, modes, quality of translation, academic utilization, as well as its benefits and drawbacks. It is evident that Google Translate utilizes powerful algorithms, which are constantly being improved to produce better translations. However, its translations may not always be accurate, and there are instances where context may be lost, leading to mistranslations. It is therefore important for users to exercise caution and not rely solely on Google Translate for translations that require the utmost accuracy. Furthermore, while Google Translate has been widely used in academic settings, it is important to note that it is not a substitute for professional translation service, especially when it comes to complex technical or legal documents.



Chapter Two: Vocabulary and Memory.

Chapter two: Vocabulary and Memory

Introduction

Language holds immense power as one of the primary means of communication. The use and understanding of language stems from an individuals' vocabulary and memory.

Vocabulary, in particular, plays a vital role in enabling individuals to express their thoughts and opinions effectively. Memory, on the other hand, enables the retention and recollection of information. In recent years, the advancement of technology has introduced a new tool in language translation; Google Translate. However, the use of Google Translate has raised questions on the impact it has on one's memory and vocabulary. This chapter will explore the definitions of vocabulary and memory, their types, and how Google Translate can affect them

2.1.1. The concept of vocabulary

Vocabulary is: "The set of words used in a particular language, dialect, or domain, or the total set of words in a language." (Oxford Languages)

According to Richard (2019), the term "vocabulary" (derived from the Latin "vocabulary"), also known as "word-stock," "lexicon," or "lexis," denotes all the words in a language that are comprehended by a certain individual or group of individuals. The words we understand and regularly use in speaking and writing make up an active vocabulary. Moreover, Nation (2013) claimed that vocabulary can be defined as the complete set of words that an individual or a group of people are familiar with and employ in their communication. Additionally, vocabulary can be categorized into various subtypes such as academic vocabulary, which refers to the specialized language used in academic contexts, domain-specific vocabulary, which pertains to the vocabulary used in particular fields or subjects, and technical vocabulary, which is the specialized vocabulary used in technical domains

such as engineering or medicine. Thornbury (2002) noted that “vocabulary is word and word is a microcosm of human consciousness”. That is to say, vocabulary is a key component of our cognitive abilities and everyone can engage in a lifetime process of vocabulary development and improvement.

From the definitions above we can deduce that vocabulary refers to the total number of words and phrases that a person knows and understands. It encompasses the words that we use to express our thoughts, feelings, and ideas, as well as the words we use to comprehend and interpret the thoughts and ideas of others. In other words, vocabulary is the set of words and expressions that an individual is familiar with and can use accurately and appropriately in various contexts, including writing, speaking, reading, and listening.

2.1.2. Types of vocabulary

To effectively learn new words, individuals require substantial practice and contextual associations to retain the vocabulary in memory and utilize it when communicating orally or in written language. According to Hiebert & Kamil (2006) an individual’s vocabulary can be categorised into either a receptive or productive vocabulary.

1. Receptive vocabulary

Receptive vocabulary refers to the words that an individual can understand when they hear or read them, but might not necessarily use them in their own speech or writing. This means that when someone is exposed to a new word, they are able to comprehend its meaning and use it in context, but they may not be able to produce the word themselves in their own speech or writing. For example, a person who is learning a new language might have a large receptive vocabulary,

meaning they can understand many words in that language, but they might struggle to actually use those words in conversation.

2. Productive vocabulary

Productive vocabulary refers to the words that an individual is able to use in their own speech or writing. This means that when someone is speaking or writing, they are able to use the words they know to express themselves effectively. For example, a person who is learning a new language might have a smaller productive vocabulary than their receptive vocabulary, meaning they may not be able to use as many words in conversation as they are able to understand when listening or reading.

It's important to note that receptive and productive vocabulary are not the same thing, and developing both is crucial for effective communication. While having a large receptive vocabulary can be helpful for understanding others and learning new words, having a large productive vocabulary is necessary for expressing oneself effectively and being able to communicate ideas clearly. In order to develop both receptive and productive vocabulary, it's important to practice using new words in context and to actively seek out opportunities to learn and use new words in conversation or writing.

2.1.3. The concept of Memory

Memory is a multifaceted concept that has been studied and defined in various ways by different fields. As it is commonly known memory is something cognitive that is responsible for remembering old scenes. Hunter (1964) mentioned in his book « Memory » that it can be considered as something abstract, He said “some of us could pretend having good memories which can be observed through an exposed behavior after a memory test, yet, none have observed any concrete thing that could be called a memory”. That is to say, memory refers to the complete activity of acquiring knowledge and subsequently demonstrating that we have retained it. In addition, Memory is a cognitive process that involves "acquiring, retaining, and retrieving information from past experiences" (Schacter, Guerin, & Jacques, 2011, p. 167). Similarly, Hockenbury & Hockenbury (2014) highlighted that memory is a fundamental aspect of cognition, which allows us to learn, adapt, and interact with our environment, as well as to retain personal experiences, knowledge, skills, and identities over time. In other words, memory is a mental activity or the capacity of the brain to get information such as events, people, and words, store it, and then recover it later. In addition to Atkinson and Shiffrin's modal model of memory, information is briefly stored in sensory memory and then transferred to short-term memory, where it is either forgotten or transferred to long-term memory for future retrieval (Atkinson & Shiffrin, 1968). Memory research also suggests that memory can be affected by a variety of internal and external factors, such as attention, motivation, emotion, and context (Eysenck & Keane, 2015).

To conclude, it can be said that memory is a fundamental aspect of cognition which allows us to learn from our past experiences and adopt new situations.

2.1.4. Types of Memory

Memory can be classified into four main types (Psycholinguistics, an introduction to memory)

- 1. Sensory Memory:** The concept of Sensory memory refers to a type of memory that involves the immediate storage of information perceived by any of the five senses. It has a very retention period of only .2 to 5 seconds due to the quick replacement of information by new sensory input. Unlike other of memory, it does not have a process to retain information. Our brain automatically processes sensory information, unless we choose to ignore it. Sometimes we experience sensory overload when there is too much information for our senses to handle, so we either select what we want to focus on or shut out everything completely. When we receive a manageable number of stimuli, three processes can occur: we can deliberately ignore the information, forget it quickly, or move it into short-term memory if we give it attention.
- 2. Short-Term Memory:** When we receive information through our senses, it is sent to our short-term memory (STM) for temporary processing and immediate use. STM has a limited capacity and can only hold a certain amount of information at a given time. Its primary function is to keep information easily available and accessible. Think of STM as a temporary memory space where tones and words are retained while language processing occurs. For example, when you listen to a sentence, the words are temporarily saved in STM until you can fully process and comprehend the complete sentence. Information is also stored here during the learning process. Initial information, i.e. how to draw the parse tree, must be stored so that subsequent material, i.e. components of noun phrases, can be traced back to previous inputs. Therefore, some

students take notes. Due to the limited amount of information contained in STM, new stimuli replace old stimuli, which make people forget what was said 5 minutes ago.

- 3. Working Memory:** Working memory (WM) is a key element of STM; in fact, the previously mentioned are frequently used alternatively. The WM is frequently referred to as the brain's "search engine." It is distinguished by four essential features. The part of the brain known as WM is responsible for manipulating information, operating over a period of seconds, providing temporary storage for incoming stimuli, and serving as a holding area for information that receives the most emphasis or attention.
- 4. Long Term Memory:** LTM can store a vast amount of information for an indefinite period. While it is impossible to remember every detail of every experience, it is commonly accepted that LTM retains significant memories that were given attention, repeated, and given significance.

2.1.5. Google Translate impact on vocabulary & memory

Google Translate is a tool that can translate words from one language to another, giving an equivalent word in the target language. Thus, EFL learners mostly depend on it when they encounter a term they do not know and need to find its meaning. This tool can be useful for quickly looking up for meaning of words. A study conducted by Clifford, Merschel, Munne and Reisinger in 2013 explored the use of machine translation in language learning. The study revealed that using machine translation offers several benefits to learners. These benefits include enhancing vocabulary knowledge, improving grammatical precision, saving time, boosting self-assurance, achieving better grades, and generating language that is more similar to a native speaker's. The

majority of participants used the tool as a dictionary, either during the translation process or when editing and reviewing text that had already been translated by the machine. In addition, Josefsson (2011) carried out research on how training students utilized Google Translate as a learning tool. The findings showed that Google Translate can be considered as a supportive tool, it was more effective than conventional resources like dictionaries, and Google Translate delivered precise and prompt translations, particularly for technical terms, phrases, and collocations. Moreover, Ducar and Schocket (2018) stated that Google Translate increases pupils' mastery of English spelling. According to the writers, Google Translate not just detects but also fixes students' original spelling problems. Google Translate now corrects high-frequency typographical errors and proposes the word or idea that the user intended. As mentioned by Baker (2013), Pena (2011) conducted a survey on the benefits of using GT for language learning and found that students had positive experiences, such as it being a quick and effective way to learn new vocabulary and providing guidance in writing.

Meanwhile, some scholars found out that GT can have negative impact on EFL learners. In this notion Oktaviana (2018) claimed that Google translate may not be a reliable tool for higher-level education, unless it is accompanied with experts. In addition, Fetria (2021) has conducted a study she found out the negative effects of utilizing GT in the classroom were severe, as evidenced by observations made in the classroom and student growth. The unrestricted and unguided use of GT by students with low English proficiency and low motivation can result passive learning. Students can effortlessly compose complete phrases using GT and other software that work in a similar way because of the fast procedure that they offer. Observed that a few minutes later, when they came across the identical word, they were unable to recall what the statement meant or how to put it together. Additionally, new users of Google Translate have a tendency to retain whole

sentences. It will be challenging for them to finish the speech smoothly if they forget a word or two. In addition to Sukkhwan (2014), there are instances where GT may not be beneficial for improving language skills as it may generate inaccurate translations.

Conclusion

In conclusion, vocabulary and memory are essential components of language learning and communication. Vocabulary enables individuals to communicate effectively, while memory allows them to retain and recollect information. There are different types of vocabulary and memory, including receptive and productive vocabulary, sensory memory, short-term memory, working memory, and long-term memory. The advent of Google Translate has certainly made language learning and communication more accessible to individuals around the world. However, as we have explored in this chapter, the use of Google Translate raises concerns about its impact on one's memory and vocabulary. Over-reliance on technology may lead to a decline in language literacy and the development of critical thinking skills. Therefore, while Google Translate may be a useful tool, it is important to strike a balance and continue to prioritize language learning by developing one's vocabulary and memory through traditional methods



**Chapter Three: Research Methodology, Data
Analysis & Discussion.**

Introduction

The third and last chapter of this study is titled "Research Methodology". It focuses on the methods and procedures that were used in the study. It will describe the process that was used to conduct the research and the results that have been obtained from it. The purpose of this study is to investigate the impact of Google Translate on EFL learners' memory and vocabulary mastery. In recent years, there has been a growing interest in the use of technology in language learning. Besides, Google Translate is one of the most widely used translation tools. However, there is a need to examine the effectiveness of using Google Translate as a tool for language learning, particularly in terms of its impact on students' ability to remember vocabulary. This study aims to address this gap by exploring the impact of Google Translate on students' memory and vocabulary mastery.

Setting

The investigation with EFL third year students was carried out at the English Department of Ibn Khaldoun University in Tiaret.

Population and Sampling

The study involved 96 EFL students to respond to a questionnaire and 30 to perform a translation task. The sampling strategy was based on the students' intermediate level of proficiency and familiarity with Google Translate. The sample was selected from the available population of students who met these criteria. In this case, the convenience sampling technique was used because it was the most practical and efficient method of gathering data. By targeting students who are familiar with Google Translate, it is expected that the results of the translation task will be more reliable and accurate, thus increasing the overall quality of the data collected.

Research Tools

In this study, we employed mixed research methods to collect and analyze the data. These included a questionnaire and translation task.

The questionnaire, composed of thirteen questions, was used to gather quantitative data on participants' views towards the impact of GT on EFL learners' memory and vocabulary mastery. The questionnaire was distributed online, and was designed based on previous research.

The translation task was used to collect qualitative data on EFL learners' ability to recall the translated word. Students were asked to translate four sentences from the English language into Arabic, and the translations were analyzed and compared.

Overall, the combination of different research tools helped us to collect both qualitative and quantitative data, and the results obtained were used to draw conclusions on the impact of GT on EFL learners' memory and vocabulary mastery and make recommendations for future research.



Data Analysis & Discussion

Analysis of the task

The study uses a translation task with four sentences that were given to 30 students from the third year of the English department of Ibn Khaldoun University -Tiaret- ;15 of the students are required to use Google Translate, while the remaining 15 must translate without it. After 15 days, they will be asked about the translation of some words from the four sentences. This task intends to demonstrate how GT effects EFL learners' memory, or more specifically; whether students remember translated words to increase their vocabulary when using GT or not.

The sentences chosen for the task are as follows:

1. The vicissitudes of life often lead us down paths we never imagined.
2. The labyrinthine corridors of the old castle were enough to make even the bravest explorer feel lost.
3. The cacophonous sound of the city was nearly drowned out by the crashing waves of the nearby oceans.
4. The pedantic scholar droned on an endlessly about the minutiae of ancient history.

These are examples of students' translations

1. Group One (using GT) :Almost students who used GT wrote this translation;

غالبا ما تقودنا تقلبات الحياة إلى مسارات لم نتخيلها أبدا

كانت ممرات المتاهة في القلعة القديمة كافية لتجعل حتى اشجع المستكشف يشعر بالضيق

كاد صوت المدينة الخافت أن يغرق بسبب الأمواج المتلاطمة من المحيط القريب

كان الباحث المتحذلق يتحدث بلا نهاية حول تفاصيل التاريخ القديم

2. **Group Two (without using GT):** the translation of sentences differed among students who did not use GT, because of the different methods used. Here are 9 different translations that were picked out of 15 translations of 3rd year students that were taken translation classes at Ibn Khaldoun university in the English department.

	The vicissitudes of life often lead us down paths we never imagined.	The labyrinthine corridors of the old castle were enough to make even the bravest explorer feel lost.	The cacophonous sound of the city was nearly drowned out by the crashing waves of the nearby oceans.	The pedantic scholar droned on an endlessly about the minutiae of ancient history
Student 1	مفاجئات الحياة تقودنا الى اتخاذ طرق لم نكن نتخيلها أبدا.	الأماكن الغامضة في بداية الحياة جعلت حتى أشجع المكتشفين يشعر بالضياع.	كاد صوت المدينة أن يختفي في ضل اصوات أمواج المحيطات القريبة منها .	كان الباحث العلمي يتجه الى الما لانهاية بخصوص التاريخ العريق.
Student 2	أحيانا ما تقودنا تقلبات الحياة الى طرق لم نتخيلها أبدا.	كانت مسارات المتاهة في القلعة القديمة كافية لجعل حتى أشجع المستكشفين يضيع بينها.	كاد صوت المدينة أن يختفي بفعل الأمواج القوية من المحيطات المجاورة.	كان الباحث المدقق ينتقل الى ما لا نهاية حول تفاصيل التاريخ القديم.
Student 3	قساوة الحياة تؤدي بنا إلى الهاوية	ممرات قصر المتاهة القديم كانت كافية لقتل عزم أشجع المستكشفين	صوت المدينة الفاتر غارق بالكاد من أصوات أمواج البحر القريب	المعلم المتخاذل كان غارقا لثواني لا متناهية في دقائق الزمن الغابر
Student 4	تتسبب المتغيرات في الحياة في توجيهنا إلى مسارات لم نتصورها يوما	كانت الممرات الشديدة التعقيد في القلعة القديمة كافية لجعل حتى أشجع المستكشفين يشعرون بالضياع	تقريبا يغلب صوت الضجيج المزعج في المدينة صوت تحطم الأمواج القريبة من المحيطات.	تحدث العالم المنأني بلا توقف عن تفاصيل تاريخية قديمة

Student 5	تقلبات الحياة غالبا ما تؤدي بنا إلى طرق لم نتخيلها إطلاقاً	متاهة ممرات الحصون القديمة كافية لجعل أشجع مستكشف يشعر بالفقدان الصوت الناشز للمدينة يكاد يغرق في صوت أمواج المحيط القريب	الصوت الناشز للمدينة يكاد يغرق في صوت أمواج المحيط القريب	يروى الباحث المتحلق تفاصيل التاريخ القديم الى ما لا نهاية
Student 6	في أغلب الأحيان تقودنا مسارات الحياة إلى طرق لم نتخيلها أبداً	ممرات المتاهة في القلعة القديمة كانت كافية لجعل أشجع مستكشف يشعر أنه	يكاد صوت ضجيج المدينة أن يكون مخبأً في أصوات أمواج المحيط القريب	كان الباحث شديد النقد يتجول بلا نهاية حول تفاصيل التاريخ القديم
Student 7	غالبا ما يؤدي بنا تقلب أحوال الحياة إلى سبل لم نكن نحسبها أبداً	كانت منافذ المتاهة في الحصن العتيق جديرة لجعل حتى أشجع المستكشفين يشعر بالإرتباك	كاد ضجيج المدينة أن يختفي وسط أصوات الأمواج المقابلة لها	تحدث الباحث الذكي بدون توقف عن التاريخ القديم
Student 8	طالما أدت بنا تقلبات الحياة إلى لروب لم نترقبها أبداً	الأماكن المجهولة في القصر القديم جعلت أشجع المستكشفين يحس أنه ضائع	طغى صوت أمواج المحيط على ضجيج المدينة	تكلم العالم المتذكي بلا نهايك عن تفاصيل التاريخ القديم
Student 9	في الأغلب تسوقنا تغيرات الحياة إلى طرق لم نتخيلها أبداً	الأروقة المعقدة في القلعة القديمة كانت كافية لتترك أجراً المكتشفين	أوشكت الأمواج الطوفانية للمحيطات أن تخفي صخب المدينة	كان العالم المتكلف يروي تفاصيل التاريخ القديم بلا توقف

Table1: Different Translation without Using GT

To check whether the students remember the words they translate or not, we get back to them after 15 days , we asked them about the translation of the following:

[the vicissitudes, the labyrinthine, the cacophonous sound, and pedantic]

From the group of students who used GT, just 4 students can recall the words' accurate translation, while 11 students cannot.

Regarding the other group who did not utilize GT, 12 of them remembered the proper translation, while the remaining 3 students did not.

After asking them, we discovered that those three students used machine translation (Reverso), and the other 10 students utilized dictionaries with the help of teachers and specialists.

Analysis of the Questionnaire

1. **Age:** the students age rate between 20 to 21 years old

2. **Sex:**

Gender	Frequency	Percentage (%)
Males	27	28.1
Females	69	71.9

Table 01: Showing students' gender

Out of the 96 respondents as shown from table (1), 27(28.1%) were males while 69 (71.9%) were females. This was an indication that female students dominated relatively in the study as shown in table (1) above.

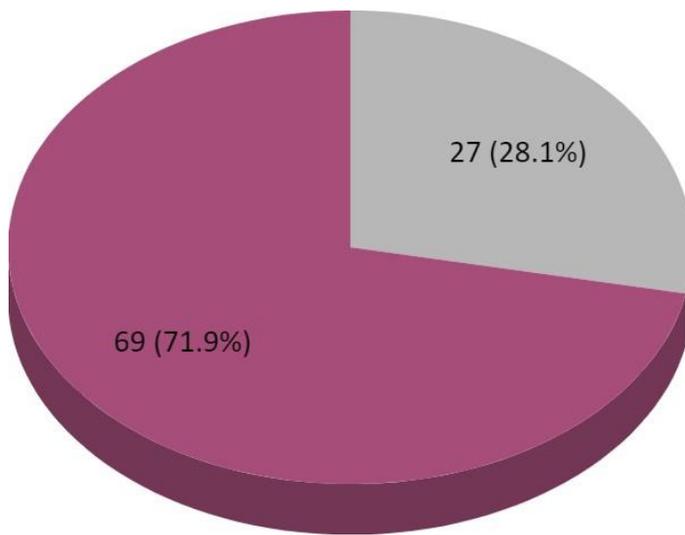
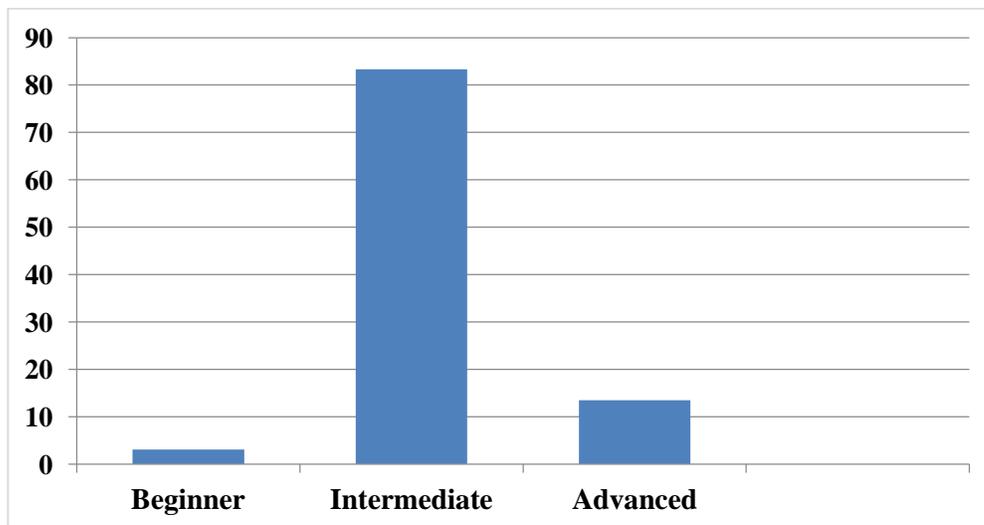


Figure 01: Showing students Gender**3. How would you assess your level in English?**

Choices	Frequency	Percentage (%)
Beginner	03	3.1
Intermediate	80	83.3
Advanced	13	13.5

Table 02: Showing students' self-evaluation on English proficiency

We can observe that the majority of students 80 (83.3%) assess their levels in English intermediate, while the rest of them 13(13.5%) stated that they are advanced whereas the other remain students assess themselves as beginners 3(3.1%) as shown in table (2).

**Figure 02: Showing students' self-evaluation on English proficiency**

4. Do you feel the need to use Machine Translation?

Choices	Frequency	Percentage (%)
To translate	51	53.1
To find new words	17	17.7
To learn new words	28	29.2

Table 03: Showing students views about the need to use machine translation

Concerning this question, the students were requested to state their opinions about their need to use machine translation in which 51(53.1%) of the informants, stated that they use it to translate, while the others 28(29.2) claimed that they use it to learn new words, and the rest of the informants 17(17.7 %) stated that they use it to find new words. Their answers are shown in the table below.

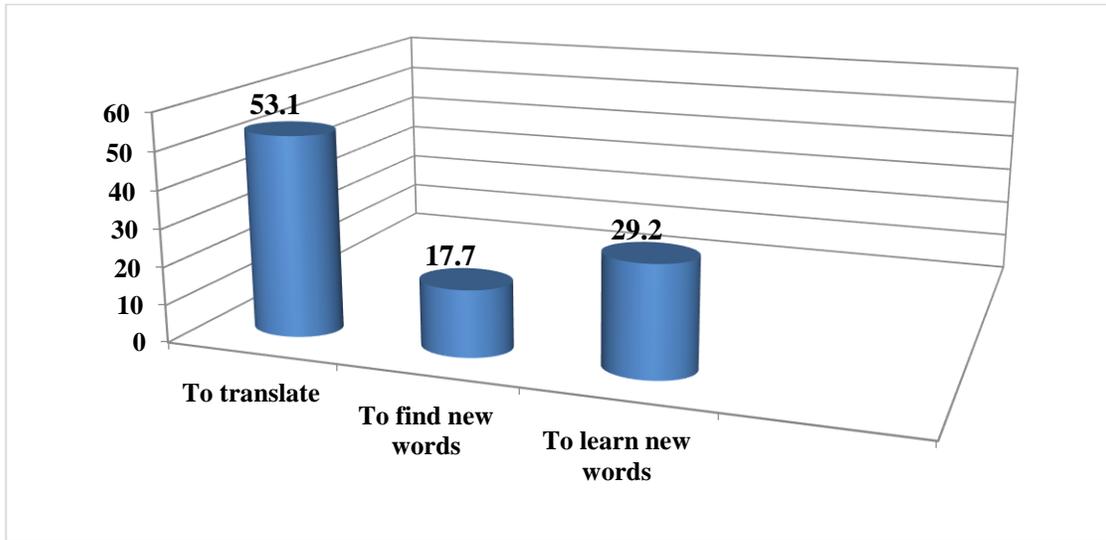


Figure 03: Showing students' views about the need to use Machine Translation

5. Which Machine Translation do you use the most?

Choices	Frequency	Percentage (%)
Google translate	75	78.9
Reverso	14	14.7
Deepl	3	2.1
Others	4	4.2

Table 04: Showing students Preferred Machine Translation Tool

The aim of this question is to figure out the most applicable translation machine tool used by the students. Through this table, we have noticed that the majority of the students have been answered

by google translate 75(78.9%), while the rest of them 14(14.7%) said that they use Reverso. Others, 3(2.1%) answered by Deepl and only 4(4.2%) answered by others. Consequently, while the highest percentage is opted for google translate, we cannot deny that it is the most useful translation machine. The following pie chart clears the view:

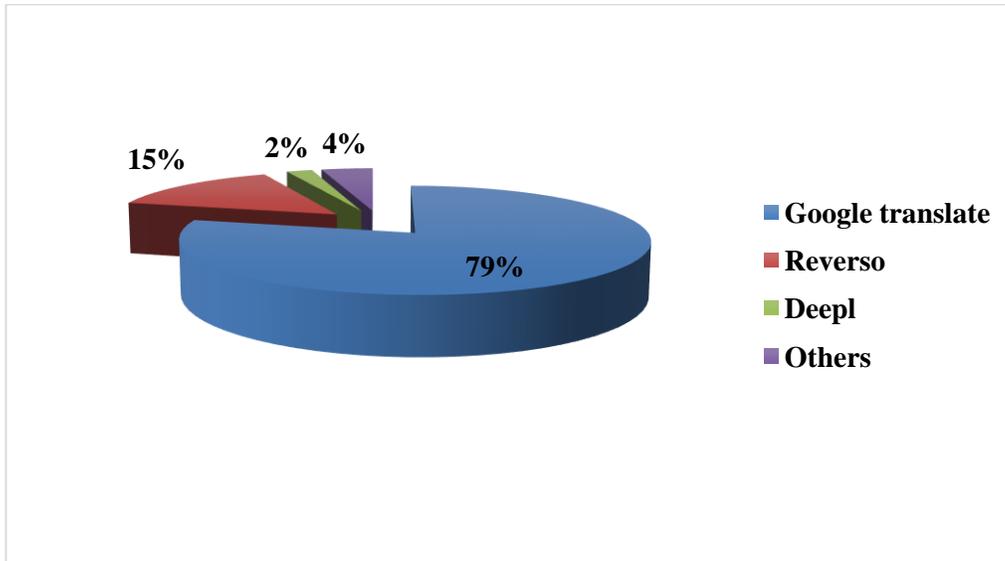


Figure 04: Showing students Preferred Machine Translation Tool

5. How often do you use Google Translate to complete your assignment?

Choices	Frequency	Percentage (%)
Never	10	10.4
Sometimes	79	82.3
Always	7	7.3

Table 05: Students’ perception about Frequency of Using Google Translate to Complete Assignments

We asked students to answer this close ended question about the frequency of using google translate to complete assignment. In which 79(82.3%) said that they sometimes depend on it to complete their assignments, and around 10(10.4%) answered by never while the others 7(7.3%) said that they always depend on it to complete their assignment. The answers illustrated in the following chart:

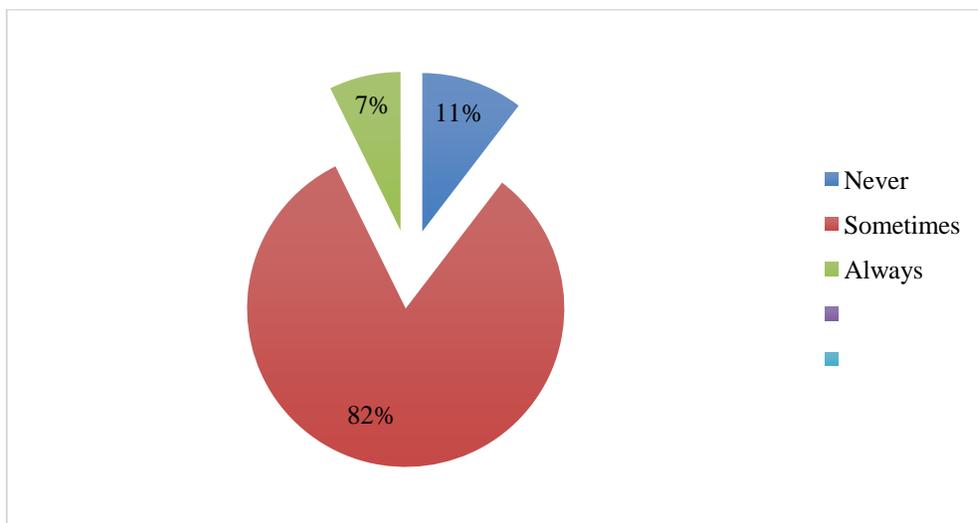


Figure 05: Students' perception about Frequency of Using Google Translate to Complete Assignments

7. Do you consider Google Translate as a reliable tool in acquiring vocabulary?

Choices	Frequency	Percentage (%)
Yes	38	39.6
No	58	60.4

Table 06: Students' views about Exploring the Reliability of Google Translate as a Tool for Vocabulary Acquisition

Students are asked to give their views about the Reliability of Google Translate as a Tool for Vocabulary Acquisition, in which 58(60.4%) said google translate is not a reliable tool in vocabulary acquisition, while 38(39.6%) answered by YES as shown in table (6). Thus we may say that most of the students depend on google translate compared to our sample.

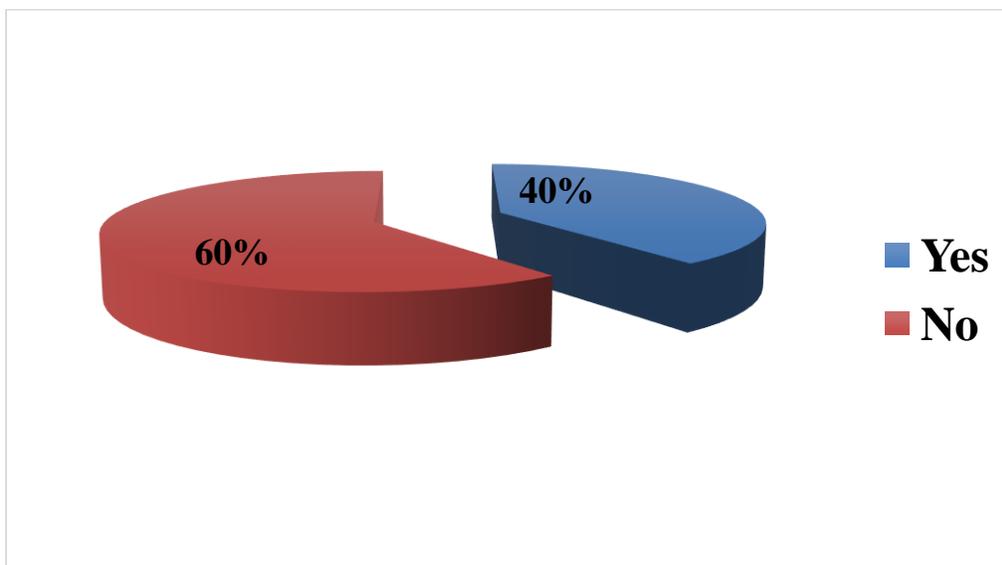


Figure 06: Students' views about Exploring the Reliability of Google Translate as a Tool for Vocabulary Acquisition

Why?

A lot of students respond on this open-ended question by saying that:

- Yes, but it should not be relied on entirely for vocabulary acquisition. It is important to use multiple tools and resources such as dictionaries, textbooks, and language learning

applications, as well as engaging with native speakers to learn vocabulary in context and to develop conversational skills.

- It is true that sometimes I need to use Google translate, but the use is just to find quick meaning of some words that are unfamiliar. But when I have more important exercise to do than I use more advanced machines such as thesaurus.
- Google Translate can be useful as a quick reference tool, but it is not a substitute for a well-rounded language learning program.

So, according to these answers we may say that a lot of people use Google translate neither than the other translation tools.

8. The translation provided by Google Translate is:

Choices	Frequency	Percentage (%)
Always correct	2	2.1
Often correct	88	91.7
Not correct	6	6.3

Table 07: Assessing the Quality of Translations Provided by Google Translate

When asking the students about the Quality of Translations Provided by Google Translate, the majority of the respondents, 88(91.7%) from a total of (100 %) of the students said that the translation of Google translate is often correct, whereas six (6) students representing the percentage of (6.3 %) said that the translation of Google translate is not correct. Besides, 2(2.1%) answered by always correct. The following figure illustrates their answers:

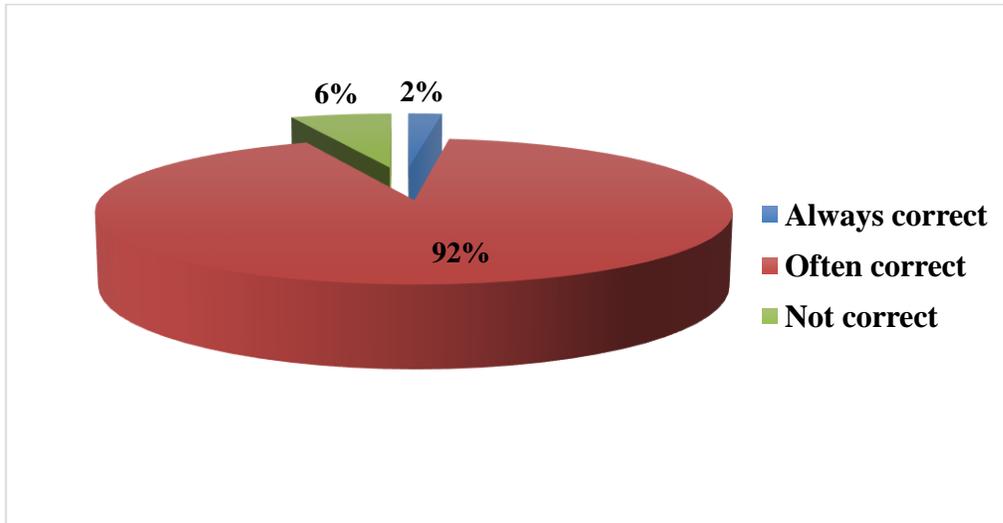


Figure 07: Assessing the Quality of Translations Provided by Google Translate

9. Do you remember the words translated when you:

Choices	Frequency	Percentage (%)
Use Google translate	17	17.7
Search for it in dictionaries	56	58.3
Ask experts	23	24

Table 08: Students' Recall Ability of Translated Words

When the students were asked about the recalling ability of translated words, many of them (56), representing the percentage of (58.3 %), stated that they remember the words translated only when they search for it in dictionaries and twenty-three (23) respondents, representing the percentage of (24 %) said that they remember the words translated only when they ask experts and the others 17(17.7 %) answered that they remember words only when use Google translate. Their answers are illustrated in the following figure:

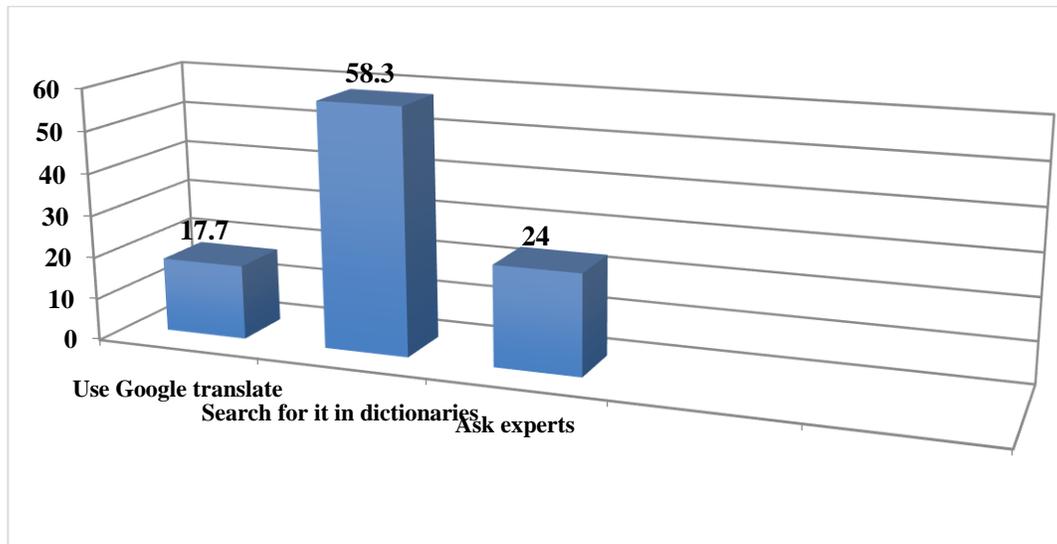


Figure 08: Students' Recall Ability of Translated Words

10. Have you experienced any difficulty in recalling the meaning of a word or a sentence that you have translated using Google Translate?

The study's findings suggest that it is possible that some users may experience difficulty in recalling the meaning of a word or a sentence that they have translated using GT. Furthermore, the data acquired from students' responses indicated that GT is inherently limited in its ability to translate idiomatic expressions that may exist in the source language. It also reliance asserted that excessive on Google translate can hinder language development skills. Additionally, they confirmed that relying too much on Google Translate may hinder the development of language learning skills.

11. Have you noticed any improvements in your vocabulary since using Google Translate?

Choices	Frequency	Percentage (%)
Yes, it has improved significantly	33	34.4
No, there has been no noticeable improvement	63	65.6

Table 09: Students' views about The Effectiveness of Using Google Translate on their vocabulary

Concerning this question, most of the students 63(65.6 %) confirmed that there has been no noticeable improvement in their vocabulary while using Google translate. Whereas, 33(34.4%) claimed that it has improved significantly. The following pie chart gives an idea about the different responses of the informants:

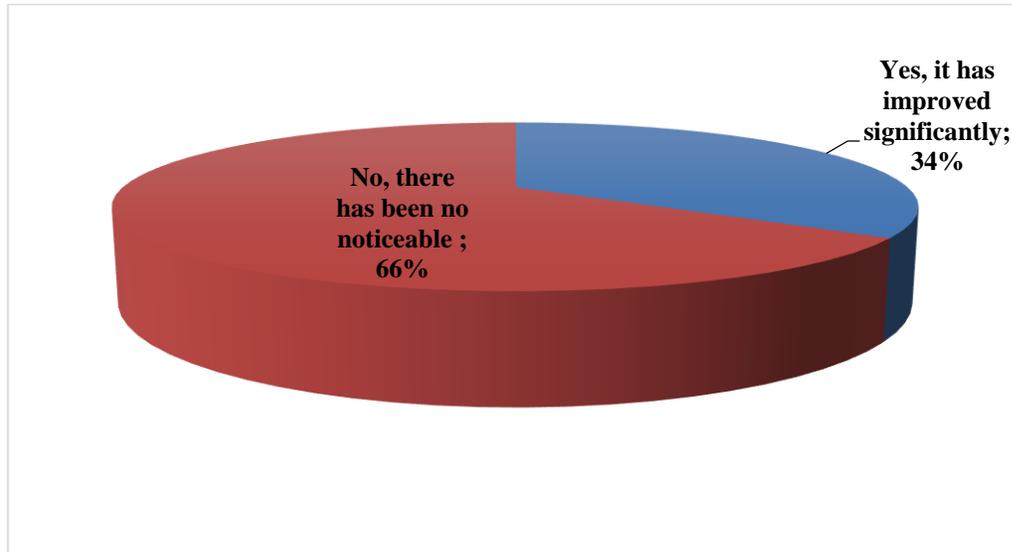


Figure 09: Students 'views about The Effectiveness of Using Google Translate on their vocabulary.

12. According to you, what are the pros of using Google Translate as a vocabulary learning tool?

Here are some pros of using Google Translate as a vocabulary learning tool suggested by the students that can be as follow:

1. Instant translations: Google Translate can provide instant translations for words or phrases in multiple languages, which can help learners to quickly understand the meaning of the word they are looking for.
2. Exposure to real-world language use: By translating sentences or paragraphs, learners can gain exposure to real-world language use and colloquialisms that may not be found in textbooks or other formal learning materials.

3. Ease of use: Google Translate is user-friendly and easily accessible through the internet or mobile devices, making it a convenient tool for learners to use on-the-go.

4. Vocabulary expansion: Using Google Translate can help learners to expand their vocabulary and improve their ability to recognize and use words in context.

However, it's important to note that Google Translate is not a perfect tool and there may be inaccuracies or errors in the translations, so it's important to use it as a supplementary tool and not rely solely on it for language learning.

13. According to you what are the cons of using Google Translate as vocabulary learning tool?

Here are some potential cons of using Google Translate as a vocabulary learning tool suggested by the students that can be as follow:

1. Inaccuracy: Google Translate may not always provide accurate translations, which can lead to incorrect vocabulary acquisition. This is especially true for complex sentences and idiomatic expressions that may not be translated accurately.

2. Limited context: Google Translate does not provide the context of a word or phrase, which is important for understanding its meaning and usage. Without context, learners may misinterpret the meaning of a word or phrase.

3. Dependence: Relying too heavily on Google Translate may result in a lack of independence and initiative in learning, as learners may not put in the effort to learn new words and phrases on their own.

4. Over-reliance on technology: Using Google Translate may discourage learners from developing their proficiency and communicating with native speakers. This can limit their ability to learn new words and phrases in context and apply them in real-life situations.

5. Limited feedback: Google Translate does not provide feedback on grammar or sentence structure, which is important for language learning. Learners may not be able to identify their mistakes and correct them if they rely solely on Google Translate.

However, it is important to note that while Google Translate can be a useful tool for vocabulary acquisition, it should be used in conjunction with other language learning resources and not as a sole source of vocabulary learning.

Discussion of the results

According to the data gathered we can state that impact of GT on EFL learners' vocabulary may be regarded as a double-edged sword. On one hand it can be an effective tool that provides students with instant translation of numerous words and phrases they do not know in a blink of an eye for free and in an easy way. Thus, this could save their time, money, energy, and improve their understanding of new vocabularies according to their instant need. On the other hand, it is not always precise, as it cannot translate idiomatic and complex sentences, so using it too frequently can lead to mistranslated words, and students may also miss out on the chance to acquire the nuances and complexities of a given language. In terms of memory retention, GT has some limits, it makes students over-reliant on it and fail to enhance their language skills. And this in its turn can hinder language development and decrease cognitive efforts. That is to say students would always refer to the translation tool (Google Translate) rather than memorizing.

But when it is used correctly, GT can be a helpful tool for language learners. Students can use it, for instance, to determine whether they comprehend a word or phrase they came across when reading or listening to material. They can create a list of phrases they need to learn using it as well, and then practice using those words in context with exercises like writing prompts or practiced conversations.

In general, and depending on how the service is utilized, GT has a complex effect on students' memory and vocabulary learning. It can be a helpful tool for language learners, but it shouldn't be overused. Instead, teachers should urge their students to actively use the language and commit new words to memory through practice and repetition.

Conclusion

In conclusion, the effect of Google Translate on students' memory and vocabulary development is a complicated problem that requires more investigation and study. While some students could find Google Translate valuable for offering rapid and convenient translations, others might find it challenging to remember and recollect the knowledge acquired via the service. When learning new words, it's important to use Google Translate with caution and not as one's only resource. The need of utilizing a range of materials to aid in language learning should be emphasized by educators, who must also promote the ability to think logically and analyze information to make reasoned judgments and decisions. Overall, while using Google Translate can be helpful as an additional tool, it shouldn't take the place of more conventional approaches of acquiring and remembering language.

General conclusion

The study sought to investigate the impact of Google Translate on EFL students at Ibn khaldoun University memory and vocabulary mastery. Thus, it seeks to confirm or reject the hypotheses, which claimed that MT can have a positive impact on EFL learning process if it is used correctly, GT can enhance EFL learners' vocabulary if is used wisely, GT can affect EFL learners' memory negatively. To attain the research objectives, 96 third-year EFL students filled out a questionnaire with thirteen questions, with a translation task composed of four sentences given to 30 students who were divided into two groups. The first group is limited to only use GT, while the second group had the freedom to select any tool other than GT.

The thesis is divided into three chapters, two for the theoretical part and one for the practical part. The first chapter is divided into two sections; the first section elucidates the concept of MT, its historical background, its approaches, in addition to its limitations and contributions. While the second section is devoted to an overview of Google Translate, how does it work, its writing modes, its quality, its academic utilization, followed by its advantages and pitfalls. The second chapter sheds the light on vocabulary and memory and the impact of GT on them. The practical part deals with the analysis of the questionnaire and the translation topic results as well as the discussion of the data gathered in the investigation.

According to the feedback given by students, it was observed that Google Translate can be useful for improving vocabulary if it is limited to translating individual words. However, translation of longer texts using this tool was not entirely accurate and could misguide learners, causing a negative impact on their learning experience. In terms of memory retention, most students reported that using Google Translate to learn new words resulted in these words being

forgotten quickly. However, they could retain these words better by consulting dictionaries or seeking clarification.

Limitations of The Study

There is no flawless work that is free of pitfalls, this study encountered certain difficulties related to:

-The absence of the translation specialty in Ibn Khaldoun University forced us to cooperate with English students in general

- small number of participants in the translation task (30 participants) because of students' disregard.

-Students' lack of responsibility toward the translation task, they should have translated a text, but because of their disregard and lack of interest, we had to change the text to short sentences.

-Due to the web-based nature of the questionnaire, many receivers did not finish it, this led to a number of incomplete questionnaires.

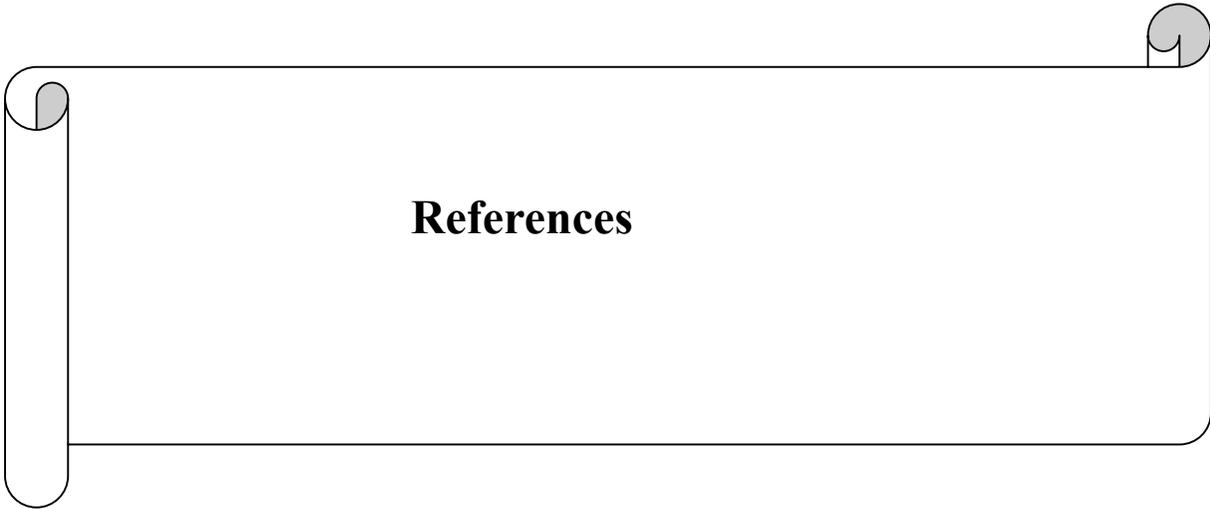
Recommendations

1. Future research should examine how GT affects other language learning areas, such as syntax and grammar.

2. Future studies may increase the applicability of their findings by using a larger sample size..

3. In teaching and learning a foreign language we should raise awareness on the strengths and limitations of using GT.It is advisable to use GT as a supplementary tool in combination with traditional language learning methods.

4. To improve their language proficiency, language learners should use different resources such as study materials, language exchange programs, and language immersion opportunities. They should concentrate on actively taking part in the language rather than relying solely on GT.



References

References

- Aiken, M and Balan, S.(2011). *An analysis of Google Translate accuracy*. Translation Journal, 16(2), April, <https://translationjournal.net/jour-nal/56google.htm>
- Alsalem, R.(2019). *The effects of the Use of Google Translate on Translation Students' learning outcomes*. Arab World English Journal for Translation and Literary Studies,3(4), 46-60. <https://doi.org/10.24093/awejtls/vol3no4.5>
- Alhaisoni, E., & Alhaysony, M. (2017). *An investigation of Saudi EFL university students' attitudes towards the use of Google Translate*. International Journal of English Language Education
- Amin, E. A.-R. (2020). *A Review of Research into Google Apps in the Process of English Language Learning and Teaching*. Arab World English Journal, 11(1), 399-418. <https://doi.org/10.24093/awej/vol11no1.27>
- Argondizzo, P. (2023). *9 Common Pitfalls of Machine Translation* | Argo Translation. <https://www.argotrans.com/blog/9-common-pitfalls-machine-translation>
- Atkinson, R. C., & Shiffrin, R. M. (1968). *Human memory: A proposed system and its control processes*. In K. W. Spence & J. T. Spence (Eds.), *The psychology of learning and motivation: Advances in research and theory*.
- Bahdanau, D., Cho, K., and Bengio, Y. (2015). *Neural Machine Translation by jointly learning to align and translate*.

- Baker, C. L. (2013). *Student and instructor perceptions of the use of online translation in English composition*. Mississippi State University. Retrieved December 12, 2016, from <http://search.proquest.com/openview/a03af45ceb26ab3caad4574e9470a/fbc/1?pq-origsite=gscholar&cbl=18750&diss=y>
- Bin Dahmash, N. (2019). *Approaches to Crafting English as a Second Language on Social Media: An Ethnographic Case Study from Saudi Arabia*. Arab World English Journal, 10(2), 136-150. <https://doi.org/10.24093/awej/vol10no2.12>
- Bin Dahmash, N.(2020). 'I Can't Live Without Google Translate': A close Look at the Use of Google Translate App by second Language learners in Saudi Arabia
- Boitet, C. Hervé, B. Mark, S, and Valérie, B.(2009). *Evolution of Machine Translation with the web*. In proceedings of the conference Machine Translation 25 years . On,1-13. Cranfield: Bedfordshire.
- Cambridge English Dictionary (2020). "Machine Translation". Cambridge University Press. Retrieved from https://dictionary.cambridge.org/dictionary/english/machine_translation
- Carl, M. & Way, A. Eds. (2003). *Recent advances in example-based machine translation*. 21. Saarbrucken, Germany
- Chandra, S. O and Yuyun, I. (2018). *The use of Google Translate in EFL essay writing*
- Cho, K., van Merriënboer, B., Gulcehre, C., Bougares, F., Schwenk, H., and Bengio, Y. (2014a). *Learning phrase representations using RNN encoder-decoder for statistical machine translation*. In Proceedings of the Empirical Methods in Natural Language Processing (EMNLP 2014) to appear
- Cho, K., van Merriënboer, B., Bahdanau, D., and Bengio, Y. (2014b). *On the properties of neural Machine translation: Encoder–Decoder approaches*. In *Eighth Workshop on Syntax, Semantics and Structure in Statistical Translation*. To appear.

- Chon, Y., V., & Shin, D. (2020). *Direct writing, and machine-translated writing: A text level analysis with Coh-Metrix*.
- Clifford, J., Merschel, L., Munné, J., and Reisinger, D. 2013. *The Elephant in the Room: Machine Translation in the Language Classroom*. Duke CIT Center for International Technology. Available at <http://cit.duke.edu/wp-content/uploads/2013/04/Elephant-in-the-Room1.pdf>. Accessed on March 27, 2014.
- Ducar, C., & Schocket, D. H. (2018). *Machine translation and the L2 classroom: Pedagogical solutions for making peace with Google translate*. *Foreign Language Annals*, 51(4), 779-795. Available at: <https://doi.org/10.1111/flan.12366>
- Elfrieda H. Hiebert, Michael L. Kamil, *Teaching and Learning Vocabulary* Mahwa, New Jersey : Lawrence Erlbaum associates, inc, 2006,3)
- Esther Heerema, M. S. W. (2022). *4 types of memory that everyone has*. Verywell Health. Retrieved April 11, 2023, from <https://www.verywellhealth.com/types-of-memory-explained-98552>
- Fredholm, K. (2015). *Online translation use in Spanish as foreign language essay writing: Effects on fluency, complexity and accuracy*.
- Garcia, I and Pena, I. M. (2011). *Machine translation-assisted language learning: writing for beginners*. *Computer Assisted Learning* 24(5), 471-487, 2011
- Gestantil, R., A., Niamsari, E., P., And Mufanti, R. (2019). *Re-overviewing Google translate results and implications in language learning*

- Ghasemi, H., & Hashemian, M.(2016). *A comparative study of Google Translate: An error analysis of English-to-Persian and Persian-to-English translations*
- Groves, M., & Mundt, K. (2015). *Google Translate in Language for Academic Purposes*. *English for Specific Purposes*, 37, 112-121.
<https://doi.org/10.1016/j.esp.2014.09.001>
- Hampshire, S., & Salvia, C. P. (2010). *Translation and the internet: Evaluating the Quality of free online machine translators*
- Hardini, Fitria. (2021). *Tackling The Negative Impacts of Students' Addiction to Google Translate*
<https://www.linguisticsnetwork.com/psycholinguistics-an-introduction-to-memory-2/>
<https://www.unitedlanguagegroup.com/blog/back-to-basics-the-benefits-of-machine-translation>
- Herlina, N., Dewanti, R., & Lustyantie, N. (2019). *Google translate as an alternative Tool for assisting students in doing translation: A case study at University Negeri Jakarta, Indonesia*. *BAHTERA*:
- Hermann, K. and Blunsom, P. (2014). *Multilingual distributed representations without word alignment*. *In Proceedings of the Second International Conference on Learning Representations (ICLR 2014)*.
- Hutchins, W. J., & Somers, H. L. (1992). *Machine Translation: Past, Present, Future*. Ellis Horwood Limited
- Hutchins, W. J. (1997). *Evaluation of machine translation*. Retrieved from <http://www.ourworld.compuserve.com>
- Hutchins, J. (2005). *Current commercial machine translation systems and computer-based translation tools: system type and their uses*. *The International Journal of Translation*, 2(2), 5-38.

- Josefsson , E. (2011). *Contemporary approaches to translation in the classroom: A study of students' attitudes and strategies*. Retrieved from:
<http://du.diva-portal.org/smash/get/diva2:519125/FULLTEXT01.pdf>.kruk,M.
- Kalchbrenner, N. & Blunsom, P. (2013). *Recurrent continuous translation models*. Oxford: Oxford University Press.
- Karami, O.(2014). *The brief view on Google Translate Machine*. Paper presented at the meeting of the 2014 seminar in Artificial intelligence on Natural language, German.
- Kazemzadeh, A. A.,& Fard Kashani, A.(2013). *The effect of computer-assisted translation on L2 learners' mastery of writing*. International Journal of Research Studies in Language learning, 3(3).
- Khatimah, K., Rahmawati, Y., Rachman, D and Pupsita, R. H.(2019). *The usage of online dictionary and translation among student in university*. International Journal of Engineering & Technology 8(1.1), 158-164, 2019
- Kirchhoff, K., Turner, A. M., Axelrod, A and Saavedra, F.(2011). *Application of statistical machine translation to public health information: a feasibility study*. Journal of American Medical Informatics Association 18(4), 473-478, 2011
- Koehn, P., & Knight, K. (2003). *Empirical methods in machine translation*. Annual Review of Computer Science, 1(1), 127-158.
- Kumar, A. (2012). *Machine translation in Arabic-speaking ELT classrooms: Applications and implications*.

- Medvedev, G. (2016). *Google translate in teaching English*.
- Maulidiyah, F., & Malang, P., N. (2018). *To use or not to use Google translate in English language learning*.
- Nation, I.S.P. and Gu, P.Y.(2007) *Focus on Vocabulary*. Sydney: NCELTR, Macquarie University.
- Nation, I. S. P. (2013). *Teaching vocabulary: Strategies and techniques*. Boston, MA: Heinle Cengage learning.
- Nordquist, Richard. (2020, August 27). *What is Vocabulary in Grammar?* Retrieved from <https://www.thoughtco.com/vocabulary-definition-1692597>.
- Oktaviana, F. (2018). A naturalistic study: English instruction at English course in Kampung Inggris. *Loquen: English Studies Journal*, 11(1),40-62
- Orch,F.(2006) Statistical machine translation live. Google Research Blog
- Oxford Languages. (n.d.). *Vocabulary*. In Oxford Languages dictionary. Retrieved from <https://www.oxfordlearnersdictionaries.com/definition/english/vocabulary>
- Patil, S., & Davies, P. (2014). *Use of Google Translate in Medical Communication: Evaluation Of Accuracy*. *BMJ : British Medical Journal*, 349, 1-3. <https://doi.org/10.1136/bmj.g7392>
- Prichard, C. (2008). *Evaluating L2 readers' vocabulary strategies and dictionary use. Reading in a Foreign Language*.
- Putri, G. D and Ardi, H.(2015). *Types of errors found in Google Translate: A model of MT evaluation*

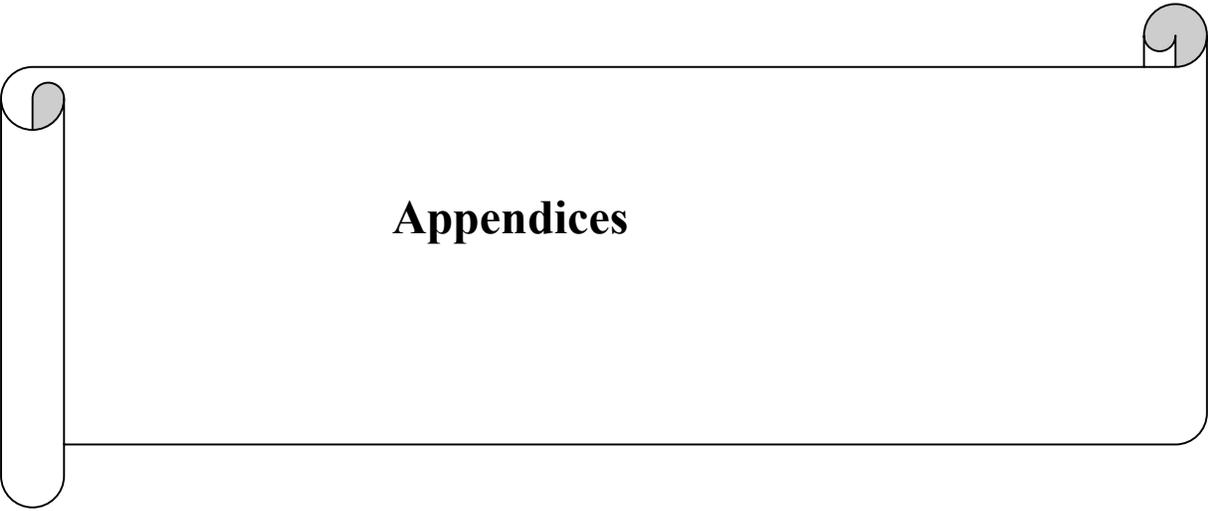
- Quah, C. (2006). *Translation and technology*. New York, NY: Palgrave Macmillan.
- Raad Raheem, B. (2020, April). *The role of machine translation in language learning*. Academic research international.
- Raza, M., A., & Nor, F., M. (2018). *Google translate in EFL classroom*
- Russel, J., S., & Norvig, P. (2010). *Artificial Intelligence: A Modern Approach (3rdEd)*. Prentice: Hall.S
- Schacter, D. L., Guerin, S. A., & Jacques, P. L. S. (2011). *Memory distortion: An adaptive perspective*. Trends in Cognitive Sciences, 15(10), 467-474.
- Thornbury, S (2002) *How to Teach Vocabulary*, Longman: Education Pearson Limited p.1
- Sukkhwan, A. (2014). *Students' attitudes and behaviors towards the use of Google Translate* (Master's thesis, Arts Degree in Teaching English as an International Language of Prince of Songkla University). Retrieved November 29, 2016, from <http://kb.psu.ac.th/psukb/bitstream/2010/9459/1/387714.pdf>.
- Sutskever, I., Vinyals, O., and Le, Q. (2014). *Sequence to sequence learning with neural networks*. In Advances in Neural Information Processing Systems (NIPS 2014).
- Tsai, S., C. (2019). *Using Google translate in EFL drafts: A preliminary investigation*. Computer Assisted Language Learning
- Valijärvi, R.L and Tarsloy, E.(2019). *Translating Google Translate to the language classroom: pitfalls and possibilities*.
- Vidhayasai, T., Keyuravong, S., & Bunsom, T. (2015). *Investigating the Use of Google Translate in "Terms and Conditions" in an Airline's Official Website: Errors and Implications*. PASAA:

Journal of Language Teaching and Learning in Thailand, 49, 137-169.
<https://files.eric.ed.gov/fulltext/EJ1077919.pdf>

Wu , Y., Schuster, M., Chen, Z., Quoc, V., L., & Norouzi, M. (2016). *Google's neural Machine translation system: Bridging the gap between human and machine Translation. Computation and language.*

Yanti, M and Meka, LMC.(2019). *The Students' perception in using Google Translate as a media in translation class.*

Zakir, H Mohamed; Nagoor, M Shafeen. *International Journal of Computer Science Issues (IJCSI);*
Mahebourg Vol. 14, Iss. 2, (Mar 2017): 54-57. DOI:10.20943/01201702.5457.



Appendix A

Translation Task:

1. The vicissitudes of life often lead us down paths we never imagined.
2. The labyrinthine corridors of the old castle were enough to make even the bravest explorer feel lost.
3. The cacophonous sound of the city was nearly drowned out by the crashing waves of the nearby oceans.
4. The pedantic scholar droned on an endlessly about the minutiae of ancient history

Appendix B

Students Questionnaire:

You are kindly requested to fill in this questionnaire that attempts to investigate the impact of Google Translate on EFL learners' memory and vocabulary mastery .

Thank you for your time and help .

1. Age :
2. Gender : Male
Female
3. How would you assess your level in english :
 - a. Beginner
 - b. Intermediate
 - c. Advanced
4. Do you feel the need to use machine translation :
 - a. To translate
 - b. To find new words
 - c. To learn new words
5. Which machine translation do you use the most ?
 - a. Google Translate
 - b. Reverso
 - c. Deepl
 - d. Others
6. How often do you use Google Translate to complete your assignments?
 - a. Never
 - b. Sometimes
 - d. Always
7. Do you consider Google Translate as a reliable tool in acquiring vocabulary
 - Yes
 - No

Why ?.....
.....

- 8. The translation provided by Google Translate is :
 - a. Always correct
 - b. Often correct
 - c. Not correct

- 9. Do you remember the words translated when you :
 - a. Search for it in dictionaries
 - b. Use Google Translate
 - c. Ask experts

10. Have you ever experienced difficulty in recalling the meaning of a word or sentence that you have translated using Google Translate?
.....

- 11. Have you noticed any improvement in your vocabulary since using Google Translate?
 - a. Yes, it has improved significantly
 - b. No, there has been no noticeable improvement

12. According to you what are the pros of using Google Translate as a vocabulary learning tool?
.....
.....
.....
.....

13. According to you what are the cons of using Google Translate as a vocabulary learning tool
.....
.....
.....

ملخص المذكرة:

عرفت السنين الأخيرة توسع ملحوظ في استخدام ترجمة قوئل كمرجع مفضل لمتعلمي اللغات وذلك لكونه سهل الاستعمال والوصول، تمكنك هاته التكنولوجيا من ترجمة الكلمات والجمل بسرعة وبسهولة لعدة لغات. لذلك تسعى هاته الأطروحة للتحقيق في مدى تأثير ترجمة قوئل على ذاكرة متعلمي اللغات الأجنبية وتمكنهم من مفرداتها. تمت هاته الدراسة على مستوى كلية اللغة الانجليزية في جامعة ابن خلدون. هاته الدراسة استخدمت معلومات أخذت من 96 طالب ثالثة ليسانس درسوا الترجمة سابقاً، هاته الدراسة استخدمت طرقاً مدمجة تتضمن تمرين ترجمة و استبيان، أظهرت النتائج التي تم الحصول عليها من أجوبة الطلبة أن ترجمة قوئل يمكنها أن تفيد في تحسين عملية كسب المفردات طالما يتم استخدامها على الكلمات الواحدة فقط، لكن استخدامها على نصوص أطول قد ينقص من دقتها مما يجعلها غير معتمدة، و قد تمدهم بمعلومات خاطئة و تؤثر سلباً على عملية تعلمهم، أما بالنسبة لذاكرتهم، ذكر العديد من الطلاب أن الكلمات المترجمة يتم نسيانها أغلب الوقت عندما تترجم باستعمال ترجمة قوئل لكن نادراً ما تنسى حين استعمال القاموس و السؤال عن التوضيح مباشرة.

كلمات مفتاحية: ترجمة غوغل، الحفظ، اتقان المفردات، تعلم اللغات.

Résumé

Ces dernières années, Google Traduction a été largement adopté par les apprenants de langues, en raison de son interface conviviale et de sa grande accessibilité. Cette technologie permet aux apprenants de traduire rapidement et sans effort des mots, des expressions et même des phrases complètes d'une langue à l'autre. Ceci étant dit, il est difficile de déterminer l'impact de son utilisation sur le processus d'acquisition d'une langue étrangère ainsi que sur la capacité des utilisateurs et des apprenants à retenir le vocabulaire traduit. Par conséquent, cet article cherche à étudier l'impact de Google Traduction sur la mémoire et la maîtrise du vocabulaire des étudiants d'Anglais langue étrangère. L'étude a été menée à l'Université d'Ibn Khaldoun au département d'anglais. L'investigation a porté sur un échantillon de 96 étudiants de troisième année qui ont suivi des cours de traduction pendant deux années académiques. L'étude s'est appuyée sur une méthode mixte comprenant un test de traduction et un questionnaire. Les résultats obtenus à partir des réponses des étudiants ont montré que Google Traduction a le potentiel d'améliorer l'acquisition du vocabulaire, à condition qu'il soit utilisé pour traduire des mots individuels. Cependant, lorsqu'il est utilisé pour traduire des textes plus longs, sa précision s'est avérée peu fiable, ce qui pourrait potentiellement induire les apprenants en erreur. De plus, en termes de mémorisation, la majorité des étudiants ont indiqué que les mots traduits avaient tendance à être oubliés lors de l'utilisation de Google Traduction et après usage, mais que la consultation de dictionnaires ou la recherche d'explications pouvaient aider à la mémorisation de ces mots.

Mots clés : *Google Traduction, mémorisation, maîtrise du vocabulaire, apprentissage des langues.*

